

ANNUAL REPORT
OF THE
ARCHÆOLOGICAL DEPARTMENT
OF

HIS EXALTED HIGHNESS THE NIZAM'S DOMINIONS

INIVE



1346 F.
(1936-37 A.C.)

CALCUTTA
BAPTIST MISSION PRESS

1939

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REPORT FOR 1346 F. (1936-37 A.C.)



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*Proceedings of the Government of His Exalted Highness the Nizam
in the Judicial, Police, and General Departments (Archæological)*

D.O. No. $\frac{15}{4}$ Miscellaneous

DARUL HYDERABAD DECCAN { 1ST ABÂN, 1347 F.
6TH SEPTEMBER, 1938 A.C.

SUBJECT

Review of the Report on the Working of the Archæological Department
for the year 1346 Fasli (1936-37 A.C.)

Personnel. There was no change in the personnel of the Department during the year under review.

Survey of Monuments. A number of new Archæological monuments were surveyed during the year in the districts and City of Hyderabad. In the City and its suburbs, several old mosques were noticed. Special mention may be made of the Bhulardas cave temple discovered in the Aurangabad district last year and now fully excavated and cleared, disclosing several noteworthy sculptures and carvings with an inscription, that seems to indicate that the cave belongs to the 8th or 9th century A.D. The shrine has been duly conserved and necessary steps taken to repair its pillars and roof.

Conservation. The conservation work progressed apace at Ajanta and Ellora as well as at Khuldabad where the Garden and Tomb of Hani Begam are being gradually restored by the sustained efforts of the Department. Repairs were also carried out at Mumtaz High and Tomb of Malik Ambar. In the course of the general clearance of the Fort of Daulatabad a series of half-finished cave-temples was discovered under the great rock of the citadel.

The valuable monuments of Bidar received their share of attention and many important repairs were executed. At Ahtâr the mosques attached to the Daragâh of Hazrat Khaliullah were fully conserved.

During the removal of the debris at Gulbarga Fort an underground passage has been discovered.

Excavations.—While extending the work on the old sites the Department tapped a number of new sites which yielded a rich crop of finds consisting of flakes, cores, pottery, etc. At Suranwâri an ancient well, built of granite slabs, and brick pavements of large apartments were discovered. Excavations at another site disclosed foundations of a massive construction and three gold coins of unpublished variety were also found. These and other coins of great historical interest are fully described in the report under the sub-head 'Numismatics'. Relics of a Jain temple, pieces of glass pottery, glass bangles and beads and coins of unknown varieties were discovered near the village of Kadkal. But excavations of a more

important nature were carried out at the well-known ancient town of Paithan in the Aurangabād district and numerous architectural remains and other antiquities have come to light. Details of these interesting excavations are given in a separate article attached with the report as Appendix C.

Museum—Good progress is reported in the collection of specimens for the Hyderabad Museum which was specially enriched by the addition of exhibits from Raichūr and Paithan.

Expenditure—The total expenditure on the conservation of monuments amounted to Rs.84,000 showing an increase of about Rs.19,000 from the last year's total; while more than Rs.1,00,000 was spent on the maintenance of the Department.

In conclusion, Government are pleased to express their appreciation of the continued good work done in every branch of the Department under Mr. Yazdani.

(By Order)

(Sd.) AZHAR HUSAIN,

*Offg. Secretary to Government,
Judicial, Police, and General Departments.*

Copy forwarded to:—

- (1) The Sadr-ul-Miham of Peshi to His Exalted Highness.
- (2) The Secretary to His Excellency the President of the Executive Council.
- (3) The Secretary to Government, Political Department.
- (4) The Secretary to Government, Financial Department.
- (5) The Secretary to Government, Public Works Department.
- (6) The Secretary to Government, Revenue Department.
- (7) The Director, Archæological Department.
- (8) The Superintendent, Government Press, for publication in the *Jarīda*.

No. 1725

FROM

GHULAM YAZDANI, ESQ., M.A., O.B.E.,
*Director, Archæological Department,
His Exalted Highness the Nizam's Dominions,
Hyderabad-Deccan.*

TO

THE SECRETARY TO GOVERNMENT,
*Judicial, Police, and General (Archæological) Departments,
Hyderabad-Deccan.*

Dated, Hyderabad-Deccan, the 6th June, 1938.

SIR,

I have the honour to submit herewith two copies of the Annual Report of this department for the year 1346 F. (1936-37 A.C.).

Two sets of photographs (27 prints each) of the buildings and other objects of Archæological interest, which have been described in the report, are also forwarded herewith.

I have the honour to be,

Sir,

Your most obedient servant,

SYED YUSUF,

Assistant Director of Archæology.

Annual Report of the Archæological Department Hyderabad

for the year

1346 F. (1936-37 A.C.)

There was no change in the personnel of the Department during the year **Personnel** under review. The Director, Mr. G. Yazdani, although on Special Duty had to do the major portion of the office routine in addition to devoting a considerable time to the compilation of Ajanta volume and various other publications. In the early part of the year—1st Ādhur to 15th Bāilman—the Director remained on privilege leave and during his absence the Assistant Director, Mr. Syed Yusuf, officiated for him.

The Director toured in the Bidar, Gulbarga and Aurangabād districts for the **Tours** supervision of conservation and excavation works which were in progress in those districts. He also paid a visit to the Bombay Museum in order to make a comparative study of the antiquities unearthed recently by the Department at Maskī, Raichūr district, with those discovered lately at Mohenjodaro (Sindh) by the Archaeological Survey of the Government of India. He toured, besides, to Burhānpūr (Berars) in connection with the scheme of the restoration of the Monument of Āsaf Jāh I at that place.¹ In all, the Director toured for 47 days. The Assistant Directors, Messrs. Syed Yusuf and Khwaja Muhammad Ahmad, toured in the Warangal, Aurangabād, Raichūr and Gulbarga Districts for 86 and 139 days respectively. The details of the tours of the Director and Assistant Directors are given in their diaries published in this report as Appendices E, F and G.

Several new monuments of considerable archaeological and historical importance were surveyed during the year in the Aurangabād, Raichūr, Gulbarga and Nalgonda districts. The monuments deserving of special notice are described below. **Survey of Monuments**

Bhokardan Cave—

The large rock-cut Brahmanical temple at Bhokardan (20° 16' N. and 75° 46' 56" E.) in the Aurangabād district referred to in the Report for 1345 F. was further explored and excavated during the year under review. The plan of the temple consists of a double hall with seven cells at the back; the middle one of which originally contained a *yoni* and a *linga* (Plate II). The cave was blocked

¹ The Monument and the scheme for its restoration are described in detail under the head Survey of Monuments.

up with earth and rubbish and after excavation it disclosed many a sculpture, the most important of which is Viṣṇu resting on the Sisaṇāga. There are also two *dvarpālās* of respectable size carved along the jambs of the door of the middle cell. On the left wall of the outer apartment of the hall are carved a male and a female figure representing Śiva and Pārvatī, the former having his arm round the waist of the latter. As the cave is situated on the left bank of the river Kelna, the waters of this stream have done much damage during the rainy season to the pillars and sculpture of the cave. Steps have been duly taken to repair the interior of the cave and to build a strong masonry dam in front of the temple so that the water of the river may not enter the cave at the periodic risings of the stream during the rainy season.¹ From the characters of the inscription² and from the style of the sculpture the cave may be assigned to the 8th or 9th century A.D.

Monument of Ḥazrat Āsaf Jāh I, Burhānpūr—

Another building of considerable historical importance surveyed during the year is the Monument of Ḥazrat Āsaf Jāh I at Burhānpūr. The monument is associated with the preliminary funebrial rites performed after the demise of Ḥazrat Āsaf Jāh I in 1611 H. (C. 1748 A.D.) and is situated at Zainabād—5 miles from Burhānpūr in the Berars, and carries an *in'ām* of two villages for its upkeep.

The monument is built in a plot of land, 18·4 acres in area of which 4·02 plus 1·93 acres have recently been acquired by the British Government for the construction of Burhānpūr—Amrāoti and Burhānpūr—Bombay roads. In the middle of the plot is an enclosure 315 ft., East to West and 360 ft., North to South. The land outside the enclosure as well as inside is under cultivation and the tenant possesses hereditary rights. In the middle of the enclosure is a platform, 84 ft. square and 3 ft. high, on which the monument proper is built. It consists of a *jālī* screen, 28 ft. 6 in. square externally and 24 ft. internally and 9 ft. 3 in. high. The design of the screen is typical Āsafjāhī and the monument was apparently built immediately after the death of Āsaf Jāh I (1748 A.D.). As the entire structure is of brick and lime and during the last two centuries it has not been properly maintained it shows signs of decay.

The Monument, together with its two *in'ām* villages, being under the jurisdiction of H.E.H. the Nizam's Government, the Government of the Central Provinces and Berars invited the attention of the former Government for a thorough conservation of the Monument. Thereupon the Director of Archæology was deputed by Government to visit Burhānpūr and to submit proposals for the conservation of the Monument. The Director's conservation notes have duly been passed on to the Revenue Department and the work will be carried out departmently if necessary funds are placed at the disposal of the Department.

Monuments in the City of Hyderabad—

To the North-east of Golconda Tombs is a small village that goes by the name of Shaikhpet. It consists of about fifty small houses which have sprung up during

¹ The measures adopted for the conservation of the cave have been described under the head 'Conservation'.
² Vide Annual Report for 1345 F. (1935-36 A.C.), p. 6 f.n.

the last hundred years. To the East of this colony is a magnificent mosque which stands upon a rectangular platform, measuring 121 ft. East to West and 78 ft. North to South, the height of the platform being 3 ft. The main building of the mosque is at a distance of about 8 ft. from the Western side of the platform and consists of a single hall measuring, 37' 6" \times 23' 6". At a distance of 30 ft. from the mosque towards the East is a cistern, 35' \times 24'.

The façade has three arched openings, each of them being 15 ft. in height and 10 ft. in breadth. The ceiling has three shallow domes and is supported by two arches, each measuring 21 ft. in breadth and 24 ft. in height. The *mihṛāb* contains six inscriptional tablets of black basalt arranged in one line, five of them are of uniform size, each measuring 21' 9" \times 1' 6". The sixth measures only 1' 6" \times 1' 2". One tablet of the size of the last one is missing and has been detached from a panel of that size. The inscription has been edited by the Director of Archaeology in the *Epigraphia Indo-Moslemica* for 1935-36. It records the construction of this mosque by 'Abdulla Quṭb Shāh in 1043 H. There are traces of enamelled work in the interior of the mosque and the façade also including the minarets, which are flanked one on each side, was profusely covered with enamelled tiles. Just below the *chhajja* and round the minarets, there was a band about 3 ft. in breadth of inscribed tiles running throughout the length of the façade. The pieces of tiles generally measure 3½" \times 2" and show a variety of colours consisting of blue, green and yellow. They have been arranged with great taste. But the letters are usually in white arranged in blue background.

The mosque in its palmy days must have looked extremely beautiful. But now for two and a half centuries it has suffered from the ravages of time. The majority of tiles have fallen down either due to the inclemencies of weather or owing to the stone shots aimed by the unmindful playing children of the locality. But they have left their marks in the plaster. The whole of the building has been constructed in stone and lime and nothing but the extra superior quality of the lime has saved the mosque from a collapse. It has no compound wall, but the local people in order to prevent the cattle from going inside have filled up the arches of this royal mosque with mud and stone up to a height of 3 ft.

To the East of Mīr-ka-Dāira is a Quṭb Shāhī mosque. It is situated quite close to the Ghassāl Wādī and is locally called Ghassālon-ki-masjid. The mosque is in the ordinary Quṭb Shāhī style. It consists of a prayer-hall, measuring 34' \times 24' 6". The roof consists of three shallow domes and rests upon two arches, each measuring 16' \times 17'. Towards the East it has three arched openings each measuring 9' \times 15'. The *mihṛāb* has an inscriptional tablet of black basalt. It records that the mosque was constructed in 1034 H. (1624 A.D.) in order to secure divine favours for Bibī Khadija, daughter of Mīr Sayyid 'Alī of Astarābād, the Shaikh of Awand. This lady died in 1031 H. and is enjoying her eternal repose in a small but beautiful tomb which is to the West of the mosque at a distance of 100 ft.

To the North-east of the mosque is a cistern measuring 25' \times 16'. The present compound wall of Mīr-Kā-Dāira, which joins the Northern and the Southern walls

of the mosque in the middle, has blocked all communication between the tomb and the mosque. But formerly there was no such barrier.

In the Golconda Fort between the Faṭh Darwāza and the Mūsa Burj, there is a large bastion called Sapōla Burj. Architecturally it is a two-storied construction having a striking resemblance to the Mūsa Burj, but it is practically devoid of any decorative feature. Its importance lies in the fact that it is situated quite close to the Somnī Darwāza, one of the old gateways of the Fort, which has been now blocked up. On the top of the bastion lies a large piece of ordnance, measuring 15 ft. 9 in. in length; the diameter at the breech being 2 ft. 4½ in. and at the muzzle, 1 ft. 8 in., while the bore is 9 in. wide. There are beautiful arabesque designs carved in low relief on some parts of the gun. But these decorations and the upper surface of the gun have suffered much from cannon shots and it seems to have been further scratched during its transport from Asīr to Golconda.

The gun according to the inscription carved upon it was manufactured during the reign of Aurangzeb in 1084 H. (1673 A.D.) by Mathra Dās, son of Rāmjī, at Asīr.¹ According to the *Ma'āthir-i-Ālamgīrī* it was used by Aurangzeb in besieging Golconda.

In the Chādarghāt locality, at a distance of about two furlongs to the North-east of Dāru-sh-Shifa, there is an old cemetery, known as Dāira-ʿArzbegī. There are two arch-shaped slabs of black basalt lying loose in the compound of the graveyard. One of them bears the date 1056 H. (1646 A.D.) and the name of the scribe, Sayyid Mirān. The other also bears the same date and the name of the person to whose tomb it was attached. The name is ʿAlī Riza.

There is a small mosque situated on the right bank of the Mūsī river, quite close to the crossing of the Dāru-sh-Shifa-Chādarghāt and New Bridge-Osmān Pūra roads. The façade of the mosque has three arched openings and an inscrip-tional tablet has been fixed just above the middle arch, recording that the mosque was constructed by Hājī Kamāl in 1035 H. (1626 A.D.). Recently considerable repairs have been done to the mosque by the City Improvement Board and the Ecclesiastical Department and a veranda has been built in front of the mosque.

As we proceed from the above-mentioned mosque towards the Chādarghāt Gate, there is a small locality called Ṭahmāsp Khān Pūra known after a Quṭb Shalī nobleman. In the locality there is a beautiful mosque dedicated to this nobleman. The mosque is built of dressed masonry and has highly artistic stucco work. Recently, a compound wall was erected on the Southern and Eastern sides of the mosque, but this is not quite in keeping with the style of the mosque. To the East of the mosque is an Old Bath and two small tombs, which are in an extremely neglected and ruined condition. Formerly, the latter buildings appear to have been attached to the mosque. Outside the present compound wall towards the East there are a few tombs; one of them has an inscrip-tional tablet recording the death of Hājī Muḥammad Taqī, son of Hājī Muḥammad Husain Qūlpāya in 1089 H. (1678 A.D.).

¹ The inscription has been published by the Director of Archaeology in the *Epigraphia Indo-Moslemica* for 1935-36.

As we draw nearer to the Chādarghāt Gate, we pass by a solitary grave with a black stone sarcophagus bearing an inscription. The tomb is known as Kālī Qabr. The locality is also known by the same name. It contains the remains of a saint, Sayyid Shāh Allāh Dost, who according to the inscription upon the tomb died in 1197 H. (1783 A.D.).

As we proceed from the Chārminār towards the East, we reach a small mosque, situated quite close to Raja Shivraj's house. The mosque has no architectural importance and consists of a prayer-hall, 19' × 10'. The roof consists of three shallow domes, and rests upon two arches, each of which measures about 6' × 12'. The façade has three arched openings, each measuring 5' × 11'. In the *mihrāb*, there is a band of five inscriptional tablets at a height of 6 ft. from the ground level. The inscriptions consist of religious texts. In the courtyard of the mosque there is a grave with a black stone sarcophagus bearing an inscription which contains religious texts but no name.

The entrance to the mosque is in the post-and-lintel style and the masonry used is of a pinkish hue. The posts and the lintel are inscribed and they bear the date 1067 Hījri. The inscription records the construction of the mosque by a lady named Šāliḥa Bibī and also refers to an endowment. The land and the buildings mentioned in the endowment should have been held as trust property to meet the expenses of the mosque but now they are being encroached upon from all sides. Upon inquiries from the local people it has been ascertained that the grave in the courtyard of the mosque is of the lady who has built the mosque.

As we resume our trek from the above-mentioned mosque towards the East we reach the Kōtla of 'Ālijāh'. To the South of the entrance of the Kōtla is a mosque, smaller than the one mentioned above. Opposite to this mosque, there is a square roofless tomb. Each side of the enclosure of this tomb measures about 17 ft. and had an entrance, which is now blocked up except the one in the Western side. The sarcophagus of the grave is inscribed and records the death of Nawāb Mīrza Muḥammad Mehdī in 1120 H. (1708 A.D.).

As we proceed from the Chārminār towards the South by the cement road and pass the compound wall of the recently built Unānī Dawākhāna, we notice a large gateway to our left. On entering the gateway if we walk about twenty steps and turn to the right we shall enter the premises of a mosque.

The mosque is not noticed from the cement road, firstly because its back is towards the main road and further for the reason that the narrow strip of land, which lies between the mosque and the main road, has recently been utilized for the construction of some two-storied shops. The main building of the mosque is not at all ornate but its fine proportions at once attract the eye. It consists of only one hall, 34' × 20'. The roof has three shallow domes resting upon two arches: each arch being 18 ft. in width and 21 ft. in height. The arch of the *mihrāb* has been built of four slabs of black basalt which are highly polished and inscribed with *Qur'ānic* texts. The inscription contains the date 1002 H. (1593 A.D.) which must be the date of the construction of the mosque. The inscription has been published in the *Epigraphia Indo-Moslemica* for 1935-36. The style of writing is of a high class. In the *mihrāb*

Prehistoric sites—

During the year under report several new prehistoric sites have been discovered by Mr. Khwaja Muhammad Ahmad in the Raichūr district. Their geographical positions are given below :—

1. *Kadkal*—In the village of this name to the West of Paritgwadi there is a small hill on the top and along the skirts of which about forty cairns exist. Some prehistoric implements also have been picked up there.
2. *Aidnāl*—It is a village about three miles due North from Lingsugūr. Here polished stone implements have been picked up in the fields.
3. *Venkatapūr*—It is three miles to the North-west of Maskī. To the South of this village are two hills along the skirts of which forty-five cairns have been found in a good condition of preservation. Some of them are in pairs. On the Western side of the hills there is another group of cairns with double rings. The outer ring in some cases has a diameter of 50 ft. On the Northern side of the hills there are traces of some square constructions which appear to be old.
4. *Totegal*—It is a deserted village situated at a distance of a mile to the West of Anandgal, a prehistoric site in the Raichūr district, which was discovered previously. At this place traces of old smelting factories were found and on and around a small hill in the vicinity of the village stone implements and pygmy flakes were picked up.
5. *Maskī*—During the year 1345 Fasli prehistoric graves in the form of *avenues* were discovered at a site to the South of the Asokan edict at Maskī. During the year under report to the West of the Edict at a distance of about a mile two groups of cairns have been discovered. One of them is very interesting as the cairns have two concentric circles of stones. The diameter of the outer circle in some cases is about 50 ft.
6. *Agatgā*—It is three miles North of Lingsugūr. At this place prehistoric implements have been picked up in the fields.
7. *Salgond*—This place is about three miles to the South-east of Rodolconda and is about a mile from the river Tungabhadra. Prehistoric implements have been picked up from this place.

Conservation

At Ajanta the work of cleaning and preserving the frescoes continued as usual. The most important measures carried out during the year related to the preservation of the frescoes on the ceiling and walls of cave XVII. Some of the frescoes on the walls of caves IX, X and XVI have also been conserved.

In the direction of the annual maintenance and repairs of the Ajanta caves the following works deserve special mention :—

1. The foot-paths leading to the caves and the platforms in front of them were repaired after the seasonal rains.

2. The passage opposite caves IX, X and XI was repaired and new steps with a parapet wall along the passage were constructed.

3. A new parapet wall was built in front of cave XXVI.

4. A re-inforced concrete shed was built to afford shelter to the two inscriptions on the wall of cave XXVI.

5. The cracks in the ceilings and walls of caves XXIII, XXVI and XXVII were grouted with cement.

6. Earth and debris which had accumulated on the platform and in the three cells of cave XXVI were cleared up.

7. All cracks and fissures in the rock-roof of caves I, II and III were grouted and made water-tight, and catch-water and side-drains were constructed along the edge of the hill for the flow of rain water. These measures, it is hoped, will prove useful in saving the caves from the ravages of nature and time.

8. The passage between caves XX and XXI, being inconvenient and hazardous, was considerably widened and paved with stone slabs, and new steps and a railing were also provided for the comfort and safety of visitors.

9. The old water storage tanks existing in caves VI and XVII which through passage of time were filled up with debris and silt have been excavated and cleared. The cistern in cave XVII when fully cleared was found to measure $35' \times 28\frac{1}{2}' \times 17'$, although at its upper opening it measured only $4' \times 5'$. Some very interesting articles of household use were also picked up in the course of the excavation.¹

At Ellora, in addition to the general clearance and repairs of the caves, the following important works were carried out during the year under review:—

1. New steps in place of the old decayed ones were constructed in front of cave VII.

2. The vast accumulation of earth and rubbish in front of cave XVI was cleared and a new parapet was constructed near the Southern end of this cave for the safety of the visitors, who can now enjoy a view of the upper story of the Kailas from this point without any risk.

3. The huge deposits of fallen rock and debris in front of caves XVII and XIX were cleared, thus exposing the entire view of these caves.

4. Similar deposits opposite cave XXI which obstructed the view were also cleared and the passage has been widened for easy motor traffic.

5. A new pathway was laid out to connect cave XXI with the road and culvert recently constructed by the P.W.D., thereby affording an easier approach to Sīta-ki-Nahānī and Indra Sabha.

¹ Minor antiquities (24 in number) were picked up at different depths during the operations. Of these some spouted jars ('lotās') with bead designs, ear-lobe discs of ivory and a red stone plaque ($4\frac{1}{4}'' \times 2\frac{1}{4}''$) with the four-handed figure of Lakṣmī embossed on it and large burnt bricks ($18'' \times 9'' \times 3''$) are the most interesting and important. From their technique the antiquities may range from the 2nd century B.C. to 7th or 8th century A.D. A burnt brick mortar of the same size as the large bricks was also discovered during the excavations. The mortar shows traces of white smeared along its depression and affords a clue to the nature of other colours used in the frescoes of Ajanta. It is hoped that when the contents of the mortar are analysed they may throw important light on the ingredients and technique of some of the colours used at Ajanta.

6. The passage leading to caves XXIX and XXXIV, which was previously very narrow and hazardous, has been widened and a permanent drain was constructed for the flow of rain water.

7. The passage leading to Indra Sabha which was previously very steep has now been improved and the walls of the culvert on the passage have been further extended and raised for the safety of visitors.

8. The area round the *banian* tree near the Indra Sabha was cleared of rank vegetation and a square masonry platform was built under the tree to afford shelter and rest to visitors.

9. The causeway on the road to the Indra Sabha was replaced by a culvert, and the portions of the road on either side of the culvert were raised, thereby rendering the road almost uniform in level.

10. The heaps of debris opposite the Indra Sabha were cleared. This has helped greatly in exposing the view of the cave and rendering the access easier.

At Khuldabād, the work of the restoration of the Garden and Tomb of Bani Begam, referred to in the Department's *Annual Report* for 1345 F., was continued during the year under report. Besides the general clearance of the entire area, the conservation of the main gateway and the laying out of causeways and lawns inside the garden are among the major works which deserve a special mention. The building of the main entrance was thoroughly repaired both inside and out and the roofs and floorings of the apartments of the upper and lower stories of the building, which previously were in an extremely dilapidated condition, have now been quite adequately conserved and fine plaster was applied to the inner faces of the walls of the rooms of the upper story. The debris of the fallen superstructure has been removed from the remains of the Eastern *bāradārī*.

The side-road to Banī Begam's Garden, which branches out from the Khuldabād Main Road, has been repaired, and a culvert was constructed on the old *nulla* to keep the road in good order during the rainy season.

Another monument which received similar treatment is Mun'im Bāgh. Here the debris and rank vegetation inside and around the monument were removed and general repairs were executed to the enclosure wall of the garden. The conservation of the building of the main entrance and the repairs to the two corner towers are among the major works done during the year.

Repairs were also carried out to the tomb of Malik 'Ambar, where in addition to the general clearance of the surrounding area, necessary repairs were executed to the masonry of the walls and the dome of the building. The fallen pinnacle of the monument was also restored after the sample of the one on the tomb of Siddi Karīma, which is a contemporary building of the same type.

The work of the clearance and conservation of the Daulatabād Fort also made considerable progress during the year. The ground round the Chīnī Maḥall and the Nizām Shāhī palaces was cleared of rank vegetation and the Southern portion of the moat and the area adjoining it was also cleared. In the course of the general clearance of the fort a series of half-finished rock-hewn shrines was discovered under the great rock of the citadel. The shrines appear from their workmanship

to correspond to the later Brahmanical caves of Ellora.¹ Among the other important works carried out during the year inside the fort are the following:—

1. Repairs were executed to the roof of the Jāmi' Masjid, which previously was in a very precarious condition.
2. The Northern rampart of the Mahākot Darwāza was damaged in places. This has been thoroughly repaired.
3. Repairs were executed to the subterranean passage and new steps and railing were erected in places where the passage had become difficult and hazardous for visitors.
4. Clearance and repairs were done to the new passage discovered under the platform of the *Mendha* (Ram-head) gun.
5. Repairs were executed to the old iron grating and the upper outlet of the passage, with a view to restoring the grating to its original condition. A new masonry platform was also constructed at this point and this affords an excellent view-point for enjoying a sight of the fort buildings.
6. The building of the Dargāh of Sākray Sulṭān and its approach were improved.
7. Repairs were done to the Bijli Gate near the Bāla Hīsār.

In addition to the above, repairs were also done to the old dilapidated tomb near the Primary School of Daulatabād town. The monument is of considerable dimensions and is situated on the main road leading to the Fort.

At Aurangabād, besides the maintenance and petty repairs of the various gateways and other monuments, the work of the conservation of Bibī-ka-Maqbara was taken up during the year and a sum of Rs.2,000 was allotted for the year's programme of work, which includes such items as the restoration of decayed masonry and plaster, conservation of the entrance gateway and minor repairs to the *chhajjas* of the minarets of the Maqbara. Another sum of Rs.4,500 was entrusted to the District Water Works Department for the laying out of the pipe line inside Maqbara Gardens. The work is in progress and when complete will help in maintaining the existing garden. A scheme for the irrigation of the entire area is under the consideration of the Department.

In the group of the Aurangabād caves, besides the petty repairs executed to the caves themselves, two culverts were constructed on the road leading to the caves. This has rendered the approach safe throughout all the seasons of the year.

The rock-cut Brahmanical temple of Bhokardan, described elsewhere in this report, was also conserved during the year under report. As the cave is situated on the left bank of the river Kelna, its interior used to get filled up with water and silt during the rainy season thus causing constant damage to the temple. The interior of the building has been completely cleared and exposed and a strong masonry dam built in front of the temple to keep away the waters of the stream. The sixteen pillars which supported the roof of the temple had badly decayed and

¹ The caves have been cleared and foot-paths have been laid out for the convenience of visitors who are desirous of seeing them.

the roof itself was threatening to give way. The pillars have been strengthened by means of re-inforced concrete and the work of the repairs to the roof is started. An 105 ft. long parapet wall has been constructed on the top of the cave and adequate drainage provided for the disposal of rain water (Plate I *a-b*).

Clearance was done on a large scale to the Anwā Temple in the Aurangabād district, and a wire fencing was erected all round the monument, with an entrance gate fixed in the Western side. The surroundings of the temple were properly cleaned and levelled and the dome of the shrine was repaired.

The newly discovered caves of Ghatotkutch, a reference to which has already been made in the Department's *Annual Report* for 1343 F. (1933-34 A.C.), were completely cleared of debris and rubbish. As a result of these operations the whole group of caves is now easily accessible and a new inscription has also been discovered in one of the caves. The passage from caves I to III having been repaired a new railing is erected along the passage for the convenience and safety of the visitors. The doorways and windows of these caves were also adequately repaired.

At Bidar, a vast programme of excavation and conservation has been carried out. In the Fort the area of the Takht Maḥall was further excavated and cleared of the huge mass of debris. As a result of these operations the large courtyard in the rear (West) of the Maḥall was completely cleared up. This affords a nice background to the building. A 14 ft. high staircase was provided for the apartments in the upper story of the Maḥall, and the ruined octagonal cistern in the Western apartment of the Maḥall was restored with a Shahabad stone margin provided around it. In the Eastern wing of the Maḥall, where very few vestiges were left of the buildings which corresponded with those in the Western wing, foundation lines were laid out to indicate the original ground-plan of the apartments. Fine plaster was done to the walls of the octagonal room at the North-western end of the building and repairs were done to the similar corresponding room at the other end of the structure.

The gap in the rear wall of the Chīnī Maḥall was filled in by restoring the fallen portion of the wall, and the building was thus made secure against the ingress of cattle. The floorings of the various apartments of the Maḥall, which had become uneven due to the falling of the superstructure, were levelled and tidied up.

In addition to the above works the network of roads inside the Fort which was damaged on account of the seasonal rains was thoroughly repaired and a new road was constructed to afford access to the Sukla Tīrath. Repairs were also executed to the subterranean passage which leads down into the moat. The circuit road round the Fort has been further extended by the gradual cutting of the Northern mud embankment and by the filling of the ditch at this point, as a result of which the visitor can very conveniently enjoy from there a view of the Fort without being required to get down from his car.

Besides the above works petty repairs were done to the first entrance gateway of the Fort. The arch of the Delhi Darwāza which had fallen off was also restored in accordance with the original design.

The conservation of Maḥmūd Gāwān's College also made considerable progress during the year. The courtyard in front of the building was thoroughly cleared and levelled and dark cement margins were laid all round the plinth of the courtyard. The position of the original approach to the building, which was through an arched entrance, that is now no more, has been set off by means of dark cement margins. This work has been done with utmost care and neatness.

At Ḥabshī Kōt, in the suburbs of Bidar, the tomb of Shāh 'Abdul Malik 'Ulayī, which is an important landmark in the panorama of Bidar monuments, was thoroughly repaired and its surroundings were tidied up.

At Ashtūr, the surroundings of the Dargāh of Hazrat Khālilullāh were improved and the approach to the shrine was repaired and made motorable. The old steps of the Dargāh platform that were washed out on account of the seasonal rains were substituted by new steps. The *sarā'i* and mosque attached to the Dargāh were made sound by the restoration of the screen of arches that once adorned their façades, and other necessary repairs. The double storied mosque just adjoining the Dargāh entrance, which was in a precarious condition, was also fully conserved. The roof of the upper story of the building was badly cracked in several places and the masonry of the arches, domes and walls was in an extremely dangerous condition. Adequate measures were adopted to conserve the building. The cisterns and causeways attached to the mosque were repaired and restored in accordance with the original plan.

At the Dargāh itself repairs were executed to the plinth of the structure and patches of plaster were applied to the walls of the octagonal enclosure where old plaster had peeled off. The façade of the building was further improved by the application of a thin coat of fine plaster and by the restoration of the missing turrets on its top. The cracks in the domes and ceilings were grouted and the interior was thoroughly repaired. The tomb of Zacheha Bachcha, in the premises of the Dargāh, also was in a very decayed condition. The masonry of the walls and the dome, which was in an advanced state of decay, was strengthened and the four doorways of the building were adequately conserved. Fine plaster was applied both to the outer and inner faces of the building.

Minor repairs were also executed to the tomb of Ahmad Shāh Baihmanī. The paintings and inscriptions inside the tomb were washed with chemicals and the flooring inside and the platform in front of the tomb were repaired. The domes of the tombs of Sulṭān Ḥasan and Shāhjahān Begam were also repaired and extensive clearance and grouting was done inside the tomb of Shāh Rukh Khān. Repairs were also done to the mosque in the vicinity of Ahmad Shāh's tomb. The old well to the South of the latter tomb was cleared of the debris and silt and the operations exposed to view two inscriptions fixed into the masonry of the well. One inscription, which is in Persian, mentions the fact that the well was constructed during the reign of 'Alī Barīd II in the year 1018 H. (c. 1609 A.D.). The other inscription is in Balbodh script. These inscriptions have been deciphered and published in the *Epigraphia Indo-Moslemica* for 1937-38.

The monuments at Gulbarga were considerably conserved by the Department through the P.W.D. in previous years. But during the year under report

the Department launched a systematic campaign of conserving and preserving the monuments of the early Bahmanis and 'Ādil Shāhīs. Ever since the inception of the Department the Government was being moved to get the fort evacuated of such dwellers who had taken their abode into it without any permission. With this object in view an amount of Rs.1,400 was sanctioned and placed with the First Taluqdar, Gulbarga, to compensate the dwellers and to get the fort evacuated. In the meantime a Darogha and four coolies were appointed to clear the fort of rank vegetation and debris. This work made satisfactory progress and during the removal of the debris an underground passage has been discovered in the Southern portion of the fort leading to the moat which runs outside the fort wall. The work of conserving the Shāh Bazār Mosque, which is one of the oldest and biggest mosques in the Deccan, was also taken in hand. The plaster of the roof and domes of the mosque had peeled off and water used to percolate through them. The plaster has been thoroughly restored and the leakage completely stopped. The domed entrance to the mosque and the flight of steps leading to it were in a miserable condition. The plaster had peeled off and the turrets and small minarets surrounding the dome were crumbling down. The stone of the steps had considerably weathered and decayed. Measures have been taken to restore this portion of the building to its original design.

Excavations:
Kadkal and
Maski

During the year under report excavations were carried out at Maski on a large scale and several new sites were tapped. The work at the old sites was extended and the caves in the hills were searched with greater care. The results of the excavations are described below with reference to the sites which have been marked on the map which appears in this report as Plate XIIIb.

The excavation of sites D and E, which were explored in 1345 Fasli also, yielded finds similar to those of the previous year. They consisted of flakes, cores, old pottery, crucibles and beads.

The site F, which is to the North-west of site D, has the particular advantage of being surrounded by hills on all sides excepting the East. Here a long trench, about 75 ft. in length and 5 ft. in breadth, was dug to a depth of 4 ft.; but nothing except alluvial sand was found, which was brought down by the rain water from the surrounding hills. Below the sand at a further depth of 3 ft. ashes in which beads of carnelian and other semi-precious stones and a few flakes were mixed up have been found.

On going 5 ft. further deep remains of old foundations about 5 ft. in breadth, built in stone and mud and running East to West, were discovered. These remains were about 7 ft. deep but trenches were not dug further down, for it was the monsoon season and it was feared that the rains may set in at any time. We had therefore to rest satisfied with the conclusion that during the prehistoric times when man inhabited this spot the level of the place was about 20 ft. below the present level.

Site G: This site is situated to the East of site E. At this place some traces of early smelting were discovered. Besides, the trench accidentally passed through two prehistoric graves, the external signs of which had totally disappeared. The pottery which was found in association with the cist resembled not

only in texture to that of the prehistoric graves excavated by the Department at other sites but also bore the 'marks' which are found on it. The graves were orientated East to West instead of being as usual North to South. The cist was made of small pieces of rough stone slabs of uniform size and inside were found two human skeletons in a comparatively good state of preservation. Of these one skull was nearly intact. The bones have been sent over to Dr. B. S. Gulia of the Zoological Survey of India for treatment and preservation along with the other bones that have been discovered in prehistoric graves.

Sites I, J and K are situated to the West of site D on the top of the hill. The height of the hill at this place is about 200 ft. above the surrounding ground. I and J are situated in a small plain and contain some rude constructions which have been hopelessly disturbed in recent times. Site K is a natural cavern, roughly a square about 8' x 8'. Excavations at these places yielded only flakes and cores.

Site M disclosed a brick pavement and some disturbed remains of old constructions. It was at this place that a terracotta cylindrical seal, slightly damaged, was discovered on the surface. The figures of an elephant and a human being with a whip in hand are incised upon the seal. When the seal is rolled on some plastic material it leaves an impression of the figures in relief. The seal bears some resemblance to the Babylonian seals (Plate XIIIa).

Site L: Suryanwārī. This site is situated to the East of Suledubba and appears to be a comparatively later site, for stone implements were practically rare at this place. But the site abounds in relics of later cultures. During the course of the excavations in addition to remains of furnaces and slag, which were discovered in abundance, three groups of old structures were exposed. The work at site L (1) resulted in the discovery of an interesting well which was about 20 ft. deep. It was built of granite slabs of a uniform size measuring $4' \times 1\frac{1}{2}' \times 3'$. At the corners of the slabs grooves were cut in such a manner that four slabs could fit into the well in the form of a frame, thus obviating the necessity of using any cementing mortar to keep the slabs together. The well is dry now. Sites L (2) and (3), which are to the South of site L (1), disclosed the pavements and foundations of old apartments the super-structures of which have completely disappeared. The pavements are usually of brick and in some cases extend over an area of about $40' \times 20'$. The foundations are mostly of rough stone. The pavements were discovered at a depth of 6 in. to 1 ft. This site is locally called Suryanwārī. At this stage it will be too early to hazard the conclusion that Suryanwārī is a corruption of Suvarn Nagari which was the seat of Asoka's government in the Deccan and which has been identified by some scholars with modern Maski.

Site M: This site is situated to the North of Suledubba, being at a distance of a mile and a half from site L towards the West. Here a trench which was about 5 ft. in breadth exposed a brick pavement extending to a length of 98 ft. Besides pavements foundations of apartments were also exposed here.

Site H: This site is situated on the left bank of the river Maski about one furlong to the West of the Dak Bungalow. Here foundations of a massive character were discovered under the ground; and while sifting the earth three gold coins of

an unpublished variety were found. These coins have been described under the head 'Numismatics' in this Report.

The finds at Maski are indeed of very great interest. They consist of stone implements and pygmy flakes of chert and chalcedony, the latter representing a great variety from the point of view of type, technique and material. The beads, like the finds of last year, are of carnelian, lapis lazuli, amethyst, crystal, onyx, ruby and garnet. One snake-head of a reddish semi-precious stone is of great interest. It has got a small hole at the base which shows that it was used as a pendent in a necklace or some other ornament. The majority of the finds are conch-shell ornaments or stone beads which indicate that shell industry and bead factories flourished at Maski at some remote time. Shell and beads have been found in different stages of manufacture. As regards beads it can be definitely stated that they were first rounded and polished, then they were bored with hard needles from diametrically opposite points. This fact has been illustrated by a vast number of pieces of beads that have been found broken while still in the process of being bored. The raw material for both these industries was imported from distant places. Shell must have been brought from the sea coast, the nearest point being at least one hundred and fifty miles off. Material for beads must have been imported from different places including lapis lazuli from Persia. The terracottas show great variety and high artistic taste.

Glass bangles and beads show high workmanship and a refined taste which were attained by the people of this locality at a later period, about the beginning of the Christian era. Illustrations of choice objects from this collection appear in Plates IX *a-b* and XII *a-b*.

Excavations
at Kadkal

Excavations of an experimental nature were carried out near the village of Kadkal, which is situated to the North-west of Lingsugūr at a distance of about three miles. It was at this place that some bronze images representing the Jaina Tirthankaras were discovered by a cultivator while ploughing his field some time ago. The matter was reported to the Archaeological Department and upon an examination of the site, pieces of brick of an unusual size were discovered in great abundance lying scattered in the field, which suggested the presence of structural remains underground.

As Jaina images were discovered at this place it was presumed that a Jaina temple might have existed there. The view was confirmed by the nature of the finds that were discovered during the course of excavations. It appears that the temple must have been of a large size because each side of the main building exposed measured 90 ft. The superstructure has totally disappeared and only the brick pavement and the foundations exist now. The pavement was found at a depth of 6 in. from the ground level. The foundations were only about 3 ft. deep and they were laid on decomposed gneissic rock. The bricks that were used in the construction of this temple measure about 17" × 10" × 2.5". One side of the flat surface is plain but the other side has wavy grooves about $\frac{3}{4}$ inch in breadth and $\frac{1}{2}$ inch deep. They were evidently made with a view to the bricks' sticking better in the building material.

As this site is about a mile to the East of Bellamrāyān Guda, which is a Stone Age site, some specimens of stone implements were also discovered, either lying on the surface, or when the earth was sifted. But the most important of the finds were the seventeen bronze images which represented the Jaina Tirthankaras. The largest of these images measures $22\frac{1}{2}'' \times 10\frac{1}{2}''$ and the smallest $11'' \times 2\frac{1}{2}''$. With the images three pedestals were also discovered. One of them bears a Canarese inscription which is being deciphered. One headless terracotta image was also found. This is the representation of a Tirthankara in a seated posture. Traces of old houses belonging to the time of the main temple are to be found all round the site.

A site to the North-east of the Jaina temple showed traces of a furnace wherein smelted quartz and pieces of glazed pottery and slag were found in large quantities. Pieces of glass bangles and beads were also discovered in great abundance, some of which show a highly developed taste.

To the North-east of this site at a distance of about a mile and a half remains of the foundations of a massive construction have been discovered. They were covered with rank vegetation and the site presented the form of a mound. On examination the remains of a large building which was nearly square, measuring $300' \times 300'$, have come to light. The superstructure of this building, just as in the case of the Jaina temple, has totally disappeared. The walls which were built in mud and stone measured about 5 ft. in thickness. A passage of uniform width (2½ ft.) runs all round the main building. The main building is divided into rectangular apartments of varying dimensions. At a distance of about 100 or 150 ft. from this building towards the North-west there are remains of smaller buildings which are now in the form of stone heaps.

In the vicinity of these buildings terracotta slabs bearing uniform circular cavities have been discovered. As it was surmised that the slabs were the moulds of old coins some trial trenches were dug which exposed sites of furnaces with traces of ash and broken pieces of terracotta moulds and also coins of unknown and unpublished varieties. As the coins exactly fitted into the moulds and as they were discovered in ashes along with the moulds the surmise that the moulds were for the manufacture of the coins has been fully confirmed; and it has been established that the site is a mint. Some of the coins have on the obverse a flying *garuda* facing to the right with folded arms while the others have a bull facing left. These coins bear a legend in Nāgarī script. As the die for the reverse of the coins was much bigger than the size of the coin itself, no complete legend has been found on any of the coins. But from the script it may be inferred that the coins range between the eleventh and fourteenth centuries A.D.

To the North of the mint some prehistoric graves have been discovered. It appears that at one time they existed in the field in which the mint is located. This is substantiated by the fact that one of the trenches which was dug by the Department passed through a prehistoric grave, the external signs of which had long disappeared. Excavations at this point yielded interesting results. It appears that the body was first cremated and afterwards some of the ashes and

the bones which had escaped calcination were placed in a big jar and buried at a depth of about 2 ft. from the ground level. The bones consisted of pieces of skull, three teeth and other limbs. The arrangement of the inside of the cairn is different from that found at Hashmatpet.¹ It appears that a pit 5'×5'×6' was dug. About twenty earthen pots of various sizes were placed in the grave and above the pots the calcined bones were placed. Some of the pots are of a small size. Two extremely disintegrated pieces of iron implements were also found.

Paithan
Excavations

Excavations of an important nature were also carried out during the year at Paithan in the Aurangabād district. The town of Paithan has a halo of antiquity and romance about it, as even in the remotest period of India's history it was well known to the ancient Greeks, Egyptians and Romans for its textiles, embroidery work, bead industry and particularly for its export through Barigaza (modern Bharoach) of onyx stone. From contemporary epigraphical records it is apparent that towards the dawn of the Christian era Paithan (ancient Pratistana) was a town of considerable importance, having enjoyed the position of the sub-capital of the Āndhra-bhṛityas. The huge array of the mounds and old ruins that flank the northern bank of river Godavari attest to this day to the pristine glory of ancient Paithan. It was in view of these facts, therefore, that the Director of Archaeology had invited the attention of the authorities as far back as the year 1915 towards a systematic excavation of this site and had expressed the hope that if excavations are conducted at Paithan they would 'throw ample light on the history of the Āndhra kings, of which at present only the barest outline is known' (*vide Annual Reports of the Archaeological Department, H.E.H. the Nizam's Government, for the year 1914-15 and the year 1919-20*).

After a preliminary survey of the site the actual excavations were started in May, 1937. The operations, although of an experimental nature, augured very hopeful results, as in addition to the discovery of several architectural remains—houses, drains, wells, etc., constructed in some cases of bricks of an exceptionally large size ($20\frac{1}{2}'' \times 8'' \times 3\frac{1}{2}''$)—copper coins of the Āndhra dynasty and in some places, where the trenches were taken to greater depths, finds of terracotta figurines, beads of lapis lazuli, carnelian, agate and crystal, all pointing to a still earlier culture, rewarded the labour of the excavator. From the discovery of the copper coins, particularly those with the Bodhi Tree and the Swastika emblems the period of the relative stratum may be assigned to the Āndhra Dynasty.² In due appreciation of the fruitful results of the operations the Government have been pleased to allow the excavations to be continued in future years.

A detailed article on Paithan Excavations, compiled by the Assistant Director, appears as Appendix C of this Report.

Epigraphy

During the year under report five Canarese inscriptional slabs which were lying in an extremely neglected condition were removed to the Dak Bungalow at Maski (Raichūr district). One tablet was lying in a field at Venkatapūr and

¹ *Vide Annual Report of the Archaeological Department, H.E.H.'s Government, for 1344 F. (1934-35 A.C.), p. 10.*

² These coins bear a great resemblance to those found by Sir A. Cunningham at Taxila (*see Ancient Coins of India—plates representing coins of Taxila*).

this has been mentioned elsewhere in connection with the prehistoric graves. Another inscriptional slab was removed from Benkanhāl, a village about five miles from Maskī. The remaining three slabs were lying one each in survey Nos. 328/2, 320/2 and 306. A Telugu inscription which was found in similar condition at Pāngal (Nalgonda district) has been removed to the Hyderabad Museum.

Mr. Syed Yusuf, the Assistant Director, collected rubbings of 8 Hindu (Marathi) and 12 Moslem inscriptions from Paithan. The Hindu inscriptions have been examined by Mr. R. M. Joshi, the Departmental Research Scholar. All of them belong to about the eighteenth century and mostly refer to the construction of the Nāg Ghāt at Paithan. Among the Moslem inscriptions the majority is of the Nizām Shāhīs—one mentioning the name of Malik 'Ambar. Some of the inscriptions belong to the Mughal dynasty, one giving the name of Aurangzeb.

The Director of Archaeology has secured rubbings of twenty more Muslim inscriptions at Hyderabad and Golconda. These inscriptions mostly belong to the Qutb Shāhī and Mughal periods and a reference has been made to some of them elsewhere in this report and an article is being compiled upon them which will be contributed to the *Epigraphia Indo-Moslemica*. The Director of Archaeology has further published the following inscriptions:—

1. Inscriptions from Kalyānī.
2. Inscriptions from Mudgal.
3. Inscriptions from Taltam Fort.
4. Two Mughal Inscriptions from Anād near the Ajanta Ghāt.
5. Two new inscriptions from the Bidar District.
6. Some unpublished inscriptions from the Bombay Presidency.
7. A bilingual inscription of Qutb'd-Dīn Khaljī from the Rasūl Khānījī Museum, Junagarh.
8. Inscription of Mubārak Shāh Khaljī from Jalor, Jodhpur State.
9. An old Urdu inscription of Aḥmad Shāh II of Gujarāt.
10. A Qutb Shāhī inscription from Patancheru, Medak District.

During the year under report 2,494 coins were added to the cabinet of the Numismatics Department. Of these 52 are of gold, 571 of silver, 1,838 of copper and 33 of alloy. Of the gold coins one has been presented by the Nagpur Museum and two have been purchased from the Provincial Museum, Lucknow. The Bombay Branch of the Royal Asiatic Society has presented 1 silver, 6 copper and 14 alloy coins. Mr. Muhammad Ahmad-ud-Din has presented to the Hyderabad Museum 1 copper coin of Tipu issued from Zuhranagar Mint. Tables showing the source and metal of the coins are given in Appendix O.

The most important acquisition for the cabinet were the coins discovered at Paithan, Kadkal and Maskī. During the course of excavations at Paithan four punch-marked coins and about twenty-five Āndhra coins were discovered. The Āndhra coins are of great interest as they have got the Boḍī Tree and Śaśana represented upon them which resemble similar symbols found on the Tamil coins shown by Major-General S. A. Cunningham on Plate II of his *South India of Ancient India*, and figured as 78, 15 and 16.

At Kadkal, an old site which was excavated during the year, a mint was discovered where terracotta moulds which were used in the manufacture of coins have been found. Coins which were also discovered along with the moulds numbered about one hundred and fifty. They represent unpublished varieties and as the legends upon them are incomplete it is difficult to assign them to a precise date. But as the legend is in Nāgarī script and as some of them bear a flying *garuda* with folded arms on one side of the coins, it is most probable that they belong to a period somewhere between the eleventh and fourteenth centuries. The gold coins found at Maskī are also of great interest. One of them is a tiny piece bearing an elephant on one side and a lion on the other. The other two bear a lion on one side resembling the one found on the Kaḍamba coins, but in certain other respects they are different from them. These three gold coins are also of an unpublished type and they have not been as yet assigned to any dynasty.

An article on these coins compiled by Mr. Khwaja Muhammad Ahmad is included as Appendix O.

Museum

The Curator was deputed to conduct excavations at Kadkal and Maskī in the Raichūr district, under the guidance of the Director of Archaeology. He was further entrusted with the work of carrying out some minor excavations and repairs at Golconda. The antiquities obtained in the Raichūr district and also at Paithan, which have been described elsewhere in the report, have been exhibited in the Museum in the newly opened Prehistoric Section.

On the auspicious occasion of the Silver Jubilee of H.E.H. the Nizam's reign the Department showed the progress of its works by the display of a number of charts, statements, publications and picture-postcards on the first floor of the Town Hall. In addition to that the Director of Archaeology arranged an exhibition of Indian paintings from the earliest times down to the beginning of the modern era, on the first floor of the Museum. The paintings among other exhibits contained actual size copies of Ajanta frescoes by Lady Herringham and by some artists of the Department. Further one hundred and sixty original paintings representing Indo-Persian, Mughal, Rājput, Kāngra, Gujarat and the Deccan schools were displayed in chronological order. An instructive note briefly describing the history and salient features of different schools was compiled by the Director and placed at the approach to the exhibition. The question of housing the vast collection of Museum's paintings has met the favourable opinion of the Government and the work of erecting a Picture Gallery close to the Museum is making a speedy progress.

The work of collecting specimens for the Museum has made considerable progress during the year under report. The addition of the Raichūr and Paithan antiquities has particularly enriched the collections of the Museum. Further some fine pieces of sculpture have been brought from Nalgonda. A manuscript copy of the *Qur'ān*, inscribed in elegant *Nashk* and containing a translation of the text by Kāshifi deserves special mention. An old wooden-frame of a looking glass, covered with lacquer and painted in Persian style is a very good specimen of

art. Again some choice specimens have been added to the sections of Bidri ware and arms and weapons.

In addition to the compilation of the *Annual Report* for 1345 Fasli the Department compiled the following publications:-

1. *Story of the Archaeological Department, Hyderabad*,—a Silver Jubilee Souvenir—with an appendix and Urdu Translation.

2. *A Survey of Painting in the Deccan*, edited by Dr. Stella Kramrisch. This monograph was produced by the joint efforts of the Hyderabad Archaeological Department and the India Society.

3. *The Rock-hewn Temples of Aurangabād*, compiled and edited by the Director, Mr. G. Yazdani.¹

4. *Indian Art of the Buddhist Period*, compiled and edited by the Director, Mr. G. Yazdani.²

5. A paper in Urdu on the *Frescoes of Ajanta*, by G. Yazdani.³

6. A paper in Urdu on *Recent Archaeological Discoveries of Paithan*, by Mr. Syed Yusuf, Assistant Director of Archaeology, broadcasted from the Hyderabad Wireless Station.

7. A paper in Urdu on *Musli Excavations*, by Mr. Khwaja Muhammad Ahmad, Curator, Hyderabad Museum, broadcasted from the Hyderabad Wireless Station.

During the year under review 160 volumes have been acquired for the Library of the Department. Of these 58 volumes have been purchased and the remaining 102 have been received in exchange. A complete list of these volumes with their titles and authors' names is given in this Report as Appendix J.

Mr. M. Franswah, Photographer of the Department, prepared 85 negatives during the year under report. The titles and scales of the photographs are given in Appendix K. Photographs and Drawings

Khan Bahadur Mr. Syed Ahmad, the Artist-Curator of Ajanta, prepared fourteen tracings of the frescoes of Ajanta, for the Department's record. He was assisted in this work by Maulawi Nazir Muhammad and Mr. Jalal Uddin. The titles and scales of these copies are given in Appendix L.

The total expenditure on the conservation of monuments amounted to Rs.84,100-2-0 (B.G. Rs.72,085-11-7) during the year, which compared with the figures for the previous year, Rs.65,255-4-0, shows an increase of Rs.18,844-14-0. The detail of this expenditure is given in Appendix I. Expenditure on Conservation

A sum of Rs.1,00,670-14-11 (B.G. Rs.86,289-6-0) has been spent during the year on the maintenance of the Department. The figures for the previous year under this head were Rs.94,671-0-7 (G.B. Rs.81,146-9-7). The detail of this expenditure is given in Appendix H. Expenditure on the maintenance of the Department

¹ This was a lantern lecture delivered by the Director before the India Society, London, on the 2nd December, 1936.

² This was a lantern lecture delivered by the Director before the Royal Asiatic Society of Great Britain and Ireland on 4th December, 1936.

³ This paper was read by the Director before the Overseas League, London, on 28th November, 1936, and was greatly appreciated by Orientalists.

The expenditure on the maintenance of the Hyderabad Museum amounted to Rs.18,045-5-8 (B.G. Rs.15,467-7-2) during the year. The detail of this expenditure is shown in Appendix R.

The Director, in addition to his tours to Gulbarga and Ajanta, in connection with the compilation of volumes on the monuments of these places, will also tour in the Raichūr, Gulbarga, Aurangabād, Nalgonda, Bidar, Atrāf-i-Baldāh and such other districts of the Dominions where excavation or conservation work of an important nature is in progress and requires his personal inspection.

The Assistant Director and the Curator, Hyderabad Museum, will tour in the Aurangabād, Nalgonda, Mahbubnagar, Warangal, Raichūr, Gulbarga, Bidar and other districts according to the requirements of the Department.

HYDERABAD-DECCAN,
7th June, 1938.

GHULAM YAZDANI,
Director of Archaeology.

APPENDICES

APPENDIX A

Technique of the Painting Process in the Cave Temples at Ajanta. By S. Paramasivan,
Archæological Chemist, Government Museum, Madras.

Introduction

The rock-cut temples of Ajanta (20° 29' N and 75° 47' E) are situated in the Deccan on the North-western frontier of H.E.H. the Nizam's Dominions. They are 55 miles North of Aurangabad, a station on the metre gauge line of the Nizam's State Railway, or 37 miles South of Jalgaon on the main line of the G.I.P. Railway.

There are 29 rock-cut temples at Ajanta. They extend about 600 yards from East to West and are excavated in the face of an almost perpendicular scarp of rock, which borders on a wild and lonely semi-circular glen, through which flows a stream. Above the caves the ravine terminates abruptly in a waterfall of seven leaps. The caves vary in elevation from about 35 feet to 100 feet above the bed of the stream.

There is much that is remarkable in the construction of these cave-temples. But their chief interest lies in their wall paintings,¹ which once decorated most of the caves. Even as late as 1879 A.D., sixteen of the twenty-nine caves had paintings.² But they have suffered damage through vicissitudes of time and environment. At present only six of the caves, namely, Caves I, II, IX, X, XVI, and XVII have paintings.³ But there are still traces of paint and plaster in almost all the other Caves.

The paintings at Ajanta belong to the golden age of Indian classical art. They represent the source and fountain-head from which half the art of Asia drew its inspiration; and no one can study their rhythmic composition, their intrinsic beauty of line, the majestic grace of their figures, and the boundless wealth of their decorative imagery without realising what a far-reaching influence they exerted on the art not of India alone and her colonies, but of every other country to which the religion of Buddha penetrated. Nor are the paintings to be appraised only in relation to the art of Asia. They will bear comparison with the best that Europe could produce down to the time of Michael Angelo.⁴

It is difficult to form a very definite estimate of the date of these paintings. Most of the paintings in caves I, II, IX, XVI, and even XVIII belong to the 6th century A.D.⁵ The later paintings in them may be a century older, while some of the paintings in caves IX, and X may possibly date from the 2nd century A.D.⁶ The paintings which are investigated here belong to the 5th-7th century A.D.

Experimental investigations

For the experimental determination of the methods and materials employed by the Ajanta artists some fragments of the painted *stucco* were obtained through the courtesy of Mr. G. Yazdani, M.A., O.B.E., Director of Archæology in H.E.H. the Nizam's Dominions. The painted *stucco* consists of a plaster of ferruginous earth, which was applied to the walls and ceilings of the caves, with white *fine plaster* thereon, the latter supporting the layer of paint.

¹ Burgess, J., *Notes on Bauddha Rock Temples of Ajanta, their paintings and sculptures, and on the Paintings of the Bagh Caves* (Bombay: Government Central Press, 1879).

John Griffiths—*The Paintings in the Buddhist Temples of Ajanta* (London, 1896).

Lady Herringham—*Ajanta Frescoes* (London, 1915).

Goloubew, V., *Documents pour servir a l'etude d'Ajanta, Les peintures de la premiere grotte, Ars Asiatica*.

Percy Brown—*Indian Painting* (Heritage of India Series), pp. 26-32, pp. 63-69.

G. Yazdani—*Ajanta* (Oxford University Press, 1930).

Benjamin Rowland and Others—*The Wall Paintings of India, Central Asia and Ceylon* (Boston: Merrymount Press, 1938).

² Percy Brown—*loc. cit.*, p. 27.

³ Percy Brown—*loc. cit.*, p. 27.

⁴ Sir John Marshall and Others—*The Bagh Caves* (London: India Society, 1927), pp. 4-5.

⁵ Burgess, J., *loc. cit.*, p. 3.

⁶ Some of the paintings in cave X belong to the 2nd century B.C. (G.Y.)

In studying the painting process at Ajanta, there are four principal factors to be considered: (1) the *carrier*, which supports the *ground*, (2) the *ground* on which the paintings are executed, (3) the pigments used in elaborating the designs, and (4) the *binding medium*, by which the pigments are strongly attached to the *ground*. Of these the last one is really important. It not only determines the technique employed in the painting process, namely, whether it is one of tempera, fresco or something else, but also exerts a certain influence on the effects produced by the pigments. It also gives an indication of the painter's craft.¹

(1) The Carrier

The inner walls and ceilings of the cave temples at Ajanta serve as the mechanical foundation of the paintings and has, therefore, to satisfy the requirements of mechanical firmness and durability. Thus they serve as the *carriers*. They are of amygdaloid trap, which is much weathered. The walls and ceilings have rough surfaces, which act as 'tooth' for the *rough plaster* to adhere firmly to them.² The hard non-porous trap has eliminated all chances of salt efflorescence, and the paintings are free from them.³

(2) The Ground

A series of experiments were conducted to study the nature of the *ground* that has been prepared to receive the paintings.

Study of the microsection :

With a fine saw the painted *stucco* was cut across vertically through the different layers composing it. The freshly exposed edge was ground to a flat surface by gently rubbing it on a plate of ground glass. The fine dust adhering to the edge was removed with a camel hair brush. Thus a section showing all the different layers of the painted *stucco* was prepared.

On examining under a travelling microscope, the prepared section revealed two lines of cleavage or junctions below the painted layer. This was due to the presence of three distinct layers in the *stucco*. The first junction is just below the painted layer and separates it from the layer of *fine plaster*. The second was between the layers of *fine plaster* and the *rough plaster*. The thicknesses of the different layers are as follows:—

TABLE I
Thicknesses in mm.

		Cave II (6th century A.D.)		Cave VII ⁴	Cave VIII	Cave XVI (6th century A.D. ⁵)
		Dark Red Plaster.	Light Red Plaster.			
Painted Stucco	..	9.5-54.3	37-47	9.5-54.3	9.5-54.3	9.5-54.3
Rough Plaster	..	9.3-54.1	36.8-46.8	9.3-54.1	9.3-54.1	9.3-54.1
Fine Plaster	..	0.1	0.1	0.1	0.1	0.1
Paint film	..	0.1	0.1	0.1	0.1	0.1

¹ Daniel V. Thompson—*The Materials of Medieval Painting* (Yale University Press: New Haven, 1936), pp. 43-47.

² Daniel V. Thompson—*loc. cit.*, p. 39.

³ While water on the surface of a *fresco* does not damage it, a tempera painting is spoiled by it. But a wet wall ruins both. The moisture penetrates into the plaster ground and carries with it any salt that might be present in solution to the surface. There they crystallize, forming white or coloured efflorescence upon the paintings. Moisture breeds mould too and is on every account disastrous to wall paintings. The hard trap surface prevents water from creeping up.

⁴ Burgess—*loc. cit.*, p. 46.

⁵ These are paintings of the Gupta Period—*Vide* Ananda K. Coomaraswamy—*loc. cit.*, p. 89.
Vide also Burgess—*loc. cit.*, pp. 57-60.

By means of a sharp pin, it was possible to separate the *fine plaster* from the rough mud plaster. But it was difficult to effect a similar separation between the paint film and the layer of *fine plaster*, as with *stuccoes* in some ancient South Indian temples.¹ This is due partly to the extreme thinness of the *fine plaster* and the paint film and partly to the weak and crumbling *rough plaster* of earth which supports them.

Size of the particles in the rough plaster :

The *rough plaster* was carefully separated from the layers of fine plaster and the paint film and gently crushed between fingers. The particles composing it were separated and graded according to size by the application of a principle enunciated in Stoke's Law, namely, that the limiting velocity of the particles falling in a fluid is proportional to the square of its diameter. For this Robinson's method² was adopted. Thus particles whose diameters were less than 200μ were separated from larger ones. Their proportions are as follows:—

TABLE II

				<200 μ	200 μ —700 μ	>700 μ
Cave	II (Dark Red)	..	..	16%	33%	51%
..	II (Light Red)	..	..	57%	29%	14%
..	VII	..	..	75%	24%	1%
..	VIII	..	..	40%	40%	20%
..	XVI	..	..	47%	47%	6%

A small fragment of the *rough plaster* was treated with dilute hydrochloric acid and heated over water bath. Almost all the components of the plaster dissolved leaving behind sharp and angular grains of silica, which contribute to the consolidation of the plaster.³

Analysis of the plaster :

To reconstruct the method adopted by the ancient artists for preparing the *rough plaster*, a few samples of it, completely separated from the *fine plaster* and the paint film, were analyzed. The results of analyses of representative specimens are as given in Table III.

From the results of analyses it is clear that silica, iron and alumina are in relatively large proportions and that the percentages of combined water and organic matter are 10.01, 5.91, 7.23, 10.47, 14.11 respectively. The organic matter must be mostly due to the presence of large quantities of vegetable fibres in the *rough plasters* in caves II, VII and XVI and paddy husks in Cave VIII. Thus the *rough plaster* has been prepared out of ferruginous earth containing a good proportion of clay (as is evident from the proportion of alumina). The proportion of lime is too low to have been purposely added. Perhaps it has occurred only as an impurity.

¹ S. Paramasivan—*The Mural Paintings in the Brihadisvara Temple at Tanjore—An Investigation into the Method—Technical Studies* (1936-37), Vol. V, p. 225.

S. Paramasivan—*Technique of the Painting Process in the Temple of Vijayalaya Cholisvaram in the Pudukkottai State—Pro. Ind. Acad. Sci.*, VII (1938), p. 285.

² Norman M. Comber, *An Introduction to the Scientific Study of the Soils* (London: Arnold, 1927), pp. 48-49.

G. W. Robinson, *Soils : Their Origin, Constitution and Classification* (Murby, 1932), pp. 12-13.

³ The sharp and angular grains interlock with one another, hold more firmly and contribute more to the firmness and consolidation of the plaster than the rounded grains, which would slide on one another thus leaving the binding weak.

TABLE III.

	Cave II (Dark Red).	Cave II (Light Red).	Cave VII	Cave VIII	Cave XVI
Moisture	2.02%	1.11%	1.25%	2.70%	2.73%
Carbon dioxide, CO ₂	0.32	0.80	0.02	0.49	0.35
Combined water and Organic matter	10.01	5.91	7.23	10.47	14.11
Silica, SiO ₂	57.05	68.61	59.10	57.94	54.42
Iron, Fe ₂ O ₃	16.36	13.35	11.76	14.38	15.71
Alumina, Al ₂ O ₃	0.06	6.85	16.34	10.10	9.47
Phosphoric Acid, P ₂ O ₅	0.12	0.10	0.00	0.13	0.11
Titanic Acid, TiO ₂	0.11	0.12	0.08	0.00	0.07
Lime, CaO	1.04	1.94	1.25	1.10	0.99
Magnesia, MgO	0.77	0.25	0.52	0.62	0.54
Manganese, MnO	1.32	0.64	0.23	0.74	0.32
Sulphuric Anhydride, SO ₃	nil	nil	nil	nil	nil
Alkalies	1.06	0.26	1.21	1.13	1.02
Nitrogen	0.09	0.13	0.11	0.08	0.10
TOTAL	99.93	100.07	100.00	100.06	99.94

It was difficult to get scrapings of the *fine plaster* entirely free from the paint film. Hence no quantitative analysis was conducted. When treated with dilute hydrochloric acid, the *fine plaster* dissolved with effervescence and evolution of carbon dioxide and the acid solution tested for calcium and strong traces of sulphate. It is clear that the *fine plaster* has been prepared out of a mixture of lime and calcium sulphate, the latter probably occurring only as an impurity.

Inert materials in the rough Plaster.

The results of chemical analyses show that sand and iron occurring in the plaster act as inert materials.

Technique of laying the ground.

As was shown in the preceding table, combined water and organic matter in the *rough plaster* varies from 5.91% to 14.11%. Methylene blue, methyl violet, acid green or iodo-eosin imparted no stain¹ to the *rough plaster*. Hence there is no organic binding medium like drying oil, glue, albumin or casein in it. The plaster did not answer Molisch's test with α -naphthol, thereby showing the absence of gum or other carbohydrates. Hence the organic matter present in the *rough plaster* must be entirely due to the vegetable fibres or paddy husks which had been specially added to the plaster and to organic impurities, if any, present in it. In the absence of lime and

¹ William Ostwald—*Iconoscopic Studies* (Microscopic Identification of homogeneous Binding Mediums). *Technical Studies* (Harvard), 1935-36, Vol. IV, pp. 140-41.

organic binding medium, the consolidation of the plaster must be due to the plasticity ¹ of clay and to the presence of vegetable fibres or paddy husks.²

Method of laying the ground

From the results of analyses it is clear that the artists applied the first coat of plaster of ferruginous earth containing a large proportion of clay. It was first worked with water. In order that the plaster might consolidate well, vegetable fibres or paddy husks were purposely added to it. The plaster was applied to the walls and the ceilings of the caves to a thickness depending upon the inequalities of their surface. A smooth coating of *fine plaster* ³ consisting of a mixture of lime and a small proportion of calcium sulphate ⁴ was applied over the *rough plaster*.

(3) *The Pigments*

The following pigments were ⁵ identified ⁶:—

<i>Cave</i>	<i>Pigments</i>
II	Yellow ochre Red ochre Carbon Lime and calcium sulphate Terre verte ⁷ Lapis lazuli
XVI	Terre verte Yellow ochre

The colour scale is limited. It is probable that only pigments, which were locally available, were used.

¹ P. Rowland regards plastic clay as consisting of very minute amorphous, non-plastic grains or cores surrounded by films of material in the colloidal (gel) state, the films, when maximum plasticity is developed, being saturated with water. When the clay is dry, the colloidal matter shrinks and becomes hard and horny and its gelatinous properties are lost. The chief effect of water on the binding power of clay is to increase the volume of colloidal (gel) matter and, therefore, enable this matter to cover a large surface of inert material.

Searle—*The Chemistry and Physics of Clays and other Ceramic materials* (London: Ernest Benn, pp. 262-63).

² Hair is used in plaster as a binding medium, and gives tenacity to the material. Manila hemp fibre has been used as a substitute for hair. As a result of experiments to ascertain its strength as compared with that of other materials, it was found that plaster slabs made with Manila hemp fibre broke at 195 lbs.; plaster mixed with sisal hemp at 150 lbs.; jute at 145 lbs. and goat's hair at 144½ lbs. Another test was made in the following manner. Two barrels of mortar were made up of equal proportions of lime and sand, one containing the usual quantity of goat's hair and the other Manila fibre. After remaining in the dry cell for 9 months, the barrels were opened. It was found that the hair had been almost eaten away and the mortar consequently broke up and crumbled quite easily. The mortar containing Manila hemp, on the other hand, showed great cohesion and required some efforts to pull it apart, the hemp fibre being apparently quite uninjured.

Saw dust has been used as a substitute for hair and also instead of sand as an aggregate. It will enable mortar to stand the effects of frost and rough weather. *Encyclopædia Britannica* (14th Edition), Vol. 18, pp. 39-40.

³ The untreated surface of the wall is not ideal for painting. It cannot always be made perfectly smooth and even and different parts of the grain take the paint differently and thereby produce different optical effects. Thus the fine plaster serves the double purpose; first to even out the wall surface to which they are applied and secondly, to provide a uniform ground underneath the paintings.

⁴ According to Mr. Rutherford J. Gettens, calcium sulphate has been used in Bāmiyān and Kizil paintings. *Vide Technical Studies* (Harvard), Vol. VI (1938), pp. 186-187 and p. 283.

⁵ It was not possible to collect all the pigments from one and the same cave lest there should be damage to the paintings.

⁶ Martin de Wild—*The Scientific Examination of Pictures* (London: G. Bell & Sons, Ltd., 1929).

R. J. Gettens and G. L. Stout—*The Stage Microscope in the Routine Examination of Paintings—Technical Studies* (1935-36), Vol. IV, pp. 216-30.

⁷ This is found associated with some of the rocks about the caves.

APPENDIX B

The Painted Process in the Cave Temples at Ellora. By S. Paramasivan, Archaeological Chemist, Government Museum, Madras.

Introduction

The great temples at Ellora (20° 5' N and 75° 17' E) are situated about 14 miles to the North West of Aurangabad, a station on the metre gauge line of the Nizam's State Railway. The caves, dating from the 1st to 11th century A.D., are excavated on the scarp of a large plateau, which extends North to South for about a mile and a quarter. The scarp at each end of this plateau thrusts out a horn towards the West. It is where the scarp at the South end begins to turn to the West that the earliest caves—the Buddhist ones—are situated; in the Northern horn is the last of the series or the Jain group—the other extremity of the series—the remaining caves belonging to the Brahmanical group.

There are 32 cave-temples at Ellora. From traces of plaster and paint in them it is evident that almost all the caves were once fully decorated with paintings. In the Buddhist group of caves, dating back from the 1st to 6th century A.D., there are traces of paintings in the ceilings of Caves I, II, and XII. In the Brahmanical group of caves, dating from the 7th to 10th century A.D., the paintings occur in the Kailasa temple (Cave XVI), belonging to the 8th century A.D., and in the series of about 100 unnumbered caves styled Ganesa Lena, which belong to the 8th–11th century A.D. In the Jain group of caves, dating from the 8th to the 11th century A.D., the paintings occur in the Indra Sabha (Cave XXXIII). But most of the paintings have suffered much damage owing to the ravages of time and weather, and it is difficult to date them.

The best specimens of Ellora paintings now extant are to be found in the Western and Southern portions of the main hall of the Kailasa (Cave XVI).¹ In spite of the attention drawn to them by James Fergusson,² Burges,³ Dr. Ananda K. Coomaraswamy,⁴ Mr. G. Yardani, and others,⁵ the Ellora paintings have not been so popular as the Ajanta ones.

The Kailasa temple was hewn out of the living rock in the latter half of the 8th century A.D. Its paintings belong to three different periods as may be judged from the three distinct layers of stucco which have been revealed. The inner layer of paintings seem to be contemporaneous with the construction of the shrine in the 8th century A.D. and resembles the later paintings at Ajanta. The uppermost layer probably belongs to the 11th or the 12th century A.D. Thus the close relationship to the Ajanta school which is noticeable in the innermost layer of paintings is gradually lost in the upper layers until it becomes finally extinct in the paintings of the architrave which, probably due to the Northern influence, are more akin to the Rajput School.

The painting at the Ganesa Lena is very crude and shows further decadence of the art. The paintings in the Jain caves are not in any way superior in technique. They are more debased in convention and soulless in feeling.

Thus the earliest paintings, which are still extant, belong to the 8th century A.D. The later paintings belong to about the 12th century A.D. or even later.

Experimental investigations

In the course of a visit to Ellora the author examined all the caves and collected damaged fragments of painted stuccoes from their walls and ceilings to experiment with. Two kinds of stuccoes were recognizable. In one of them there was rough plaster of mud with rough plaster of lime in one or more layers. The other contained rough plaster of lime alone. One could easily

¹ *Annual Report of the Archaeological Department of H.E.H. the Nizam's Dominions* (1927-28), pp. 19-22.

² *The Cave Temples of India*, pp. 453-55.

³ *Frescoes at Ellora*, *Ostas. Zeitschrift N.F.* Vol. III (1926); *History of Indian and Indonesian Art* (London: Edward Goldston, 1927), pp. 100-101.

⁴ Thompson, D. V., *Preliminary notes on some early Hindu Paintings*, Rupam, 26, 1926.

collect yellow, red, green, black and white pigments. In reconstruction, the knowledge of the methods of production of these paintings, one has to consider the nature of the surface, the nature of the pigments and the binding medium. They will be considered below in detail.

Since the materials were collected from damaged caves, it is difficult to date them. They can be dated approximately from the 5th to 14th centuries A.D.

(1) The Ceiling

The inner walls and ceilings of the caves serve as the canvas. The material is of Deccan trap which, though much weathered, is yet strong and compact. They are extremely rough for the plaster to hold on firmly*. The hard trap has eliminated all chances of a loose surface existing on the surface of the paintings.

(2) The Plaster

The following experiments were conducted to study the nature of the cement that has been prepared to support the paintings.

Study of Plaster section

A microsection of the painted cave was prepared in the usual way*. In the case of the work mud plaster the section had to be prepared very carefully without damaging it. An examination of the section under a travelling microscope revealed lines of cleavage or junctions due to the presence of distinct layers in the plaster. The first junction is between the layer of paint and that of the *fine plaster* and the second between the layer of *fine plaster* and that of the *rough plaster*. The other lines of cleavage were due to the existence of more than one layer in the *rough plaster*. In other words, there are two or more layers of the rough plaster applied one over the other. These results can be tabulated thus:-

TABLE I

Cave	Number of junctions	Number of layers	Details of the layers
XII	2	3	<i>Rough plaster</i> of lime, <i>Fine plaster</i> of lime, Paint film.
XIII	3	4	Mud plaster, <i>Rough plaster</i> of lime, <i>Fine plaster</i> of lime, Paint film.
XV	2	3	<i>Rough plaster</i> of lime, <i>Fine plaster</i> of lime, Paint film.
XV	4	5	Mud plaster, <i>Rough plaster</i> of lime (2 layers), <i>Fine plaster</i> of lime, Paint film.
XVI	2	3	Mud plaster, <i>Fine plaster</i> of lime, Paint film.

* Daniel V. Thompson, *The Materials of Medieval Painting* (New Haven: Yale University Press, 1938), pp. 11-15.

* Daniel V. Thompson, *ibid.*, p. 30.

* S. Putnamashan, *The Science of the Painting Process in the Temple of Varaha at Chidambaram*, *Proc. Ind. Acad. Sci.*, Vol. VII (1939), p. 281.

* S. Putnamashan, *ibid.*, p. 281.

Cave	Number of junctions	Number of layers	Details of the layers
XXII	3	4	Mud plaster. <i>Rough plaster</i> of lime. <i>Fine plaster</i> of lime. Paint film.
XXV	3	4	Mud plaster. <i>Rough plaster</i> of lime. <i>Fine plaster</i> of lime. Paint film.
XXXI	2	3	<i>Rough plaster</i> of lime. <i>Fine plaster</i> of lime. Paint film.
XXXI	2	3	<i>Rough plaster</i> of lime. <i>Fine plaster</i> of lime. Paint film.
XXXIII	2	3	<i>Rough plaster</i> of lime. <i>Fine plaster</i> of lime. Paint film.

The binding between the mud plaster and the lime plaster is very weak. Hence the two layers can be separated from each other with a sharp pin. The binding between (1) the *rough plaster* of lime and the *fine plaster* of lime, (2) consecutive layers of *rough plaster* of lime, and (3) the *fine plaster* of lime and the paint film is relatively stronger than that between the mud plaster and lime plaster and it was only with some difficulty that the layers of lime plaster could be separated from each other or from the layer of paint. In a few places even these could be separated with ease.

With a travelling microscope the thicknesses of the different layers were measured and they were as follows:—

TABLE II
Thicknesses in mm.

Cave	Painted Stucco	Rough Plaster	Fine Plaster	Paint film
XII	7.6-13.8	Single layer (lime) 7.0-63.2	0.3	0.3
XII	Damaged	2 layers:— Mud—not available Lime 1.9-2.1	0.5	0.5
XV	9.6-14.5	Mud 3.6-7.0 Lime 5.2-6.5 (Few 8.6)	0.5	0.5
XV	10.4-15.3	Mud 4.0-6.8 Lime: (1) 4-6.8 (2) 3.5-5.2	0.4	0.4
XVI	2.8-6.2	Lime: 1.9-5.3	0.4	0.5
XXV	13.2-18.0	Mud: 7.7-11.3 Lime: 4.5-5.7	0.5	0.5
XXXI	2.3-4.1	Lime: 1.4-3.2	0.4	0.5
XXXI	4.7-6.3	Lime: 3.6-5.2	0.5	0.6
XXXIII	3-3.5	Lime: 2-2.5	0.5	0.5

Thus the paint film, being thicker, shows a certain lack of delicacy in the artists' handling of the brush.

Size of the particles:

The *rough plaster*—the mud plaster and the lime plaster taken separately—was freed from the *fine plaster* and the paint film and crushed gently between the fingers. The particles composing it were graded according to size by the application of Robinson's method¹ and the proportion and sizes of the particles were as follows:—

TABLE III

Cave	Material of Rough Plaster	<200 μ	200 μ -700 μ	>700 μ
XII	Lime	81%	0	0%
XII	Lime	58	42	0
XV	(Mud	52	43	15
	(Lime	51	46	0
	(Lime	64	36	0
XV	Lime	58	42	0
XVI	Lime	64	36	0
XXV	Lime	50	50	0
XXXI	Lime	62	38	0
XXXI	Lime	44	56	0
XXXIII	Lime	82	18	0

In the case of the lime plaster, particles whose sizes are less than 200 μ are composed of lime, clay and fine particles of silica while larger particles are mostly of silica. In the case of the mud plaster the smaller particles which are less than 200 μ are composed of clay, fine particles of silica and laterite, while the larger particles are mostly of silica and laterite.

Analysis of the Plaster:

From the chemical composition of the different layers of the plaster one is enabled to ascertain the methods used for preparing them. The results of analyses of representative specimens of the plaster are as follows:—

TABLE IV

					Chemical Analyses Cave No. XV	Mud plaster Cave No. XXV
					Per cent	Per cent
Moisture	..	..	..	..	1.89	1.08
Carbon dioxide, CO ₂	..	..	..	..	1.61	2.59
Combined water and organic matter	..	..	..	..	3.04	2.94
Silica, SiO ₂	..	..	..	..	64.27	70.52
Iron, Fe ₂ O ₃	..	..	..	..	11.29	11.99
Alumina, Al ₂ O ₃	..	..	..	..	7.89	4.56
Phosphoric Acid, P ₂ O ₅	..	..	..	..	0.22	0.10
Titanic Acid, TiO ₂	..	..	..	..	0.08	0.12
Lime, CaO	..	..	..	..	6.24	4.56
Magnesia, MgO	..	..	..	..	2.53	0.44
Manganese, MnO	..	..	..	..	0.13	0.34
Alkalies	..	..	..	..	0.78	0.71
Nitrogen	..	..	..	..	0.11	0.12
TOTAL					100.08	100.07

¹ Norman M. Comber, *An Introduction to the Scientific Study of Soils* (London: Arnold, 1927), pp. 48-49.

G. W. Robinson, *Soils: Their Origin, Constitution and Classification* (Murby, 1932), pp. 12-13.

TABLE V
Lime Plaster
(Per cent.)

	Cave Nos.									
	XII	XII	XV	XV	XV	XVI	XXV	XXXI	XXXI	XXXIII
Moisture ..	0.85	1.97	0.61	1.01	1.06	0.37	0.91	1.18	0.99	0.85
Carbon dioxide, CO_2 ..	27.72	24.34	31.51	26.15	28.32	29.87	26.91	28.47	29.62	35.42
Combined water and Organic matter ..	5.42	6.86	8.87	13.15	11.03	1.07	3.12	10.29	7.21	1.58
Silica, SiO_2 ..	11.14	11.08	6.56	8.12	8.38	5.34	5.84	10.32	7.78	7.41
Iron and Alumina, Fe_2O_3 Al_2O_3 ..	2.74	4.68	1.81	1.67	2.24	1.39	3.17	2.60	2.42	2.86
Lime, CaO ..	49.98	49.19	49.19	45.06	47.12	60.21	57.05	38.00	49.14	45.22
Magnesia, MgO ..	1.31	0.87	0.47	3.04	0.95	0.71	0.61	7.64	1.57	5.05
Sulphuric Anhydride, SO_2 ..	0.07	0.56	0.05	0.83	0.18	0.02	0.64	0.32	0.15	0.10
Undetermined (mostly alkalis) ..	0.77	0.45	0.93	0.97	0.72	1.02	1.75	1.09	1.12	1.51
TOTAL ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

The results of analyses of the mud plaster show that it is of ferruginous earth containing a large percentage of silica and a fair proportion of iron and alumina. Lime is present to the extent of 6.24% and 4.56%, respectively. Since the proportion of lime is low, it should have been present in the original material of the plaster as an impurity. Combined water and organic matter together occur to the extent of 3.04% and 2.94%, respectively. The organic matter must have been due almost to the vegetable fibres purposely added to the plaster and not due to any organic binding medium in it, as will be shown later.

Taking the rough lime plaster, it is clear that lime and sand are the principal components, and the causes responsible for their consolidation are very well known.¹

The low percentage of iron and alumina (except in the case of the plaster from Cave XII) and of sulphuric anhydride is significant. It means that the proportion of clay is low and that a pure rich lime having no hydraulic properties has been used by the Ellora artists. Gypsum, if present in the plaster, prevents its setting and gives rise to efflorescence. But its presence is almost negligible except in Cave XXXI. Pure rich lime without the admixture of sand or other inert material like sand, is not satisfactory for plaster. It becomes friable on carbonation and lacks setting power.² But the proportion of silica is very low varying from 5.34% to 11.14%. It is highly probable that the silica was present originally in the lime as an impurity, and not purposely added. This point

¹ J. W. Mellor—*A comprehensive Treatise on Inorganic and Theoretical Chemistry* (London: Longmans, Green and Company, 1923), Vol. III, p. 677.

² S. Paramasivan—*loc. cit.*, p. 286.

will be discussed later. From the low percentage of the alkalies and other soluble salts, it is evident that some care should have been taken in the preparation of lime¹ for the painting work.

On account of their extreme thinness and the strong binding between the *fine plaster* and the paint film and between the *fine plaster* and the *rough plaster*, it was very difficult to get samples of *fine plaster* completely freed from the paint film and the *rough plaster*. But some of the scrapings of the *fine plaster*, carefully freed of the *rough plaster* and the paint film, was collected and treated with dilute hydrochloric acid. The scrapings dissolved with effervescence and evolution of carbon dioxide, and the acid solution gave tests for calcium and feeble reactions for sulphate, thereby showing that a mixture of lime and calcium sulphate, the latter occurring only in relatively very small proportions, probably as an impurity, was applied over the *rough plaster* to serve as *fine plaster*.^{2, 3}

In this connection, it is interesting to note that *rough plaster* of mud was common at Ajanta,⁴ Bāgh,⁵ Bāmiyān and Kizil.⁶ *Rough plaster* of lime was common with South Indian wall paintings at Sittannavasal,⁴ Tanjore⁵ and Conjeevaram.⁴ But the *ground* for the Ellora paintings is in mud, lime or both, the last one occurring in distinct layers. While the *fine plaster* of Bāmiyān and Kizil is of gypsum, that in Ajanta, Bāgh and Ellora seem to have been a mixture of lime, and small traces of gypsum.

Inert Materials in the Plaster:

The results of chemical analyses show that silica, lime and iron are the inert materials in the mud plaster.

In the case of the lime plaster, the results of chemical analyses show that sand alone has been used as inert material. But if the artist had added marble dust or powdered limestone or shell—the original material from which the lime for the *fresco* had been prepared—it would not have been identified in the course of chemical analyses. Further experiments⁶ would be necessary, and such experiments showed clearly (1) that marble dust is not present, and (2) that the plaster contains particles of silica with iron oxide as impurity, the latter occurring both as hydrated yellow oxide and anhydrous red oxide. Thus in preparing the lime for the plaster a part of the original material had been burnt, while the remaining portion was left unburnt or that a mixture of burnt and unburnt material had been used for the plaster. At the same time there were particles with density 2.74⁷ occurring in the plaster. Thus limestone alone has been used for preparing the lime, and a portion of it has been used as inert material.

Technique of laying the ground:

The preceding tables show that the percentage of combined water and organic matter in both the earth and lime plasters varies from 2.94% to 3.04% and from 1.07% to 13.15%, respectively. That it is not due to the presence of any organic binding medium like drying oil, glue, albumin or casein is proved by the failure of methylene blue, methyl violet, acid green or iodococin to impart any stain to the *rough plaster*.⁸ Nor did the *rough plaster* answer Molisch's test with α -naphthol for the presence of gum or any other carbohydrate. Thus gum has not been used in the *rough plaster*. These reactions were common to both the mud and the lime plaster.

¹ Max Doerner—*The Materials of the Artist and Their Use in Painting*, translated (New York: Harcourt Brace & Co., 1934), p. 269.

² S. Paramasivan—*loc. cit.*, p. 288.

³ The Paintings at Bamiyan and Kizil have fine plaster of gypsum—*vide Technical Studies*, Vol. VI (1938), pp. 186-87 and p. 283.

⁴ In the course of publication.

⁵ S. Paramasivan—*The Mural Paintings in the Brihadisvara Temple at Tanjore—An Investigation into the Method—Technical Studies* (1936-37), Vol. V, pp. 221-240.

⁶ S. Paramasivan—*loc. cit.*, pp. 286-87.

⁷ S. Paramasivan—*loc. cit.*, p. 287.

⁸ William Ostwald—*Iconoscopic Studies (Microscopic Identification of Homogeneous Binding Mediums)*, translated, *Technical Studies* (Harvard), 1935-36, Vol. IV, pp. 140-141.

On being treated with dilute hydrochloric acid, a fragment of the lime plaster disintegrated with evolution of carbon dioxide and the separation of silica and the acid solution gave tests for calcium. Thus it seems probable that it was lime that consolidated the plaster. But the lime plaster softens with water and there is not the consolidation and firmness that is usually associated with lime plaster. As has already been explained, this is due to the ill burnt lime having been used for the plaster or burnt and powdered limestone having been mixed with plenty of unburnt limestone. It must be mentioned here that the plasters—both mud and lime ones—contain a large quantity of vegetable fibres, which are difficult to identify.¹ Thus the consolidation of the lime plaster has been brought about partly by the plasticity of clay² and partly by the vegetable fibres.³

The *rough plaster* is mostly composed of burnt and unburnt limestone mixed together. No extraneous inert material seems to have been added. The presence of silica may be explained as an impurity originally present in the limestone. Under these conditions one can work out the probable approximate composition of the limestone that has been used in the preparation of the plaster, thus:—

TABLE VI

Cave	Calcium Carbonate CaCO_3	Silica SiO_2	Iron and Alumina $\text{Fe}_2\text{O}_3 + \text{Al}_2\text{O}_3$	Magnesium Carbonate MgCO_3	Calcium Sulphate CaSO_4
XII	86.09%	10.03%	2.47%	1.30%	0.11%
XII	82.46	4.43	10.48	1.72	0.91
XV	90.40	6.77	1.86	0.89	0.08
XV	81.92	8.36	1.72	6.55	1.45
XV	84.49	10.06	2.69	2.39	0.37
XVI	92.86	4.62	1.20	1.29	0.03
XXV	89.76	5.26	2.85	1.15	0.98
XXXI	69.58	10.63	2.77	16.46	0.56
XXXI	86.89	7.21	2.40	3.25	0.25
XXXIII	81.09	7.31	2.86	8.47	0.27

Considering the fact that impurities might have been associated with the limestone from which the plaster has been prepared or with the plaster itself the proportion of the calcium carbonate in the various specimens of the plaster appears to be approximately the same except in Cave XXXI, which has a lower percentage of the carbonate.

Method of laying the ground

The results of analyses indicate that the artists applied the first coat of plaster of either earth or of lime to a thickness varying with the inequalities of the surface of the rock. In all the cases examined the mud plaster was covered with one or two coats of lime plaster. It is not known whether there was *rough plaster* of mud alone, without the application of lime, as at Ajanta. In all cases, the plaster, whether it was of earth or of lime, was consolidated with vegetable fibres. The *rough plaster* was given a smooth coating of lime plaster.

¹ Samples of vegetable fibres have been sent to Prof. Birbal Sahni, F.R.S., for examination.

² Searle—*The Chemistry and Physics of Clays and other Ceramic Materials*, 1920, p. 100.

³ *Encyclopædia Britannica*, 14th edition, Vol. 18, pp. 39-40.

a small proportion of calcium sulphate. The binding between the *fine plaster* and the *rough plaster* is fairly strong.

(3) The Pigments

The following pigments were identified at Ellora¹ :—

Yellow ochre
Red ochre
Terre verte²
Carbon
Lime and gypsum.

It was not possible to collect other pigments on account of the damaged condition of the paintings. It is also likely that the colour scale is limited as is usually the case with *fresco* paintings such as is adopted here, for pigments, which are sensitive to alkalis, should not be used with lime.

(4) The Binding Medium

From the available specimens it was seen that the paint layer is weakly adhering to the plaster. It withstood brushing but easily disintegrated when soaked even in cold water. At the same time, no vehicle could be extracted from it with ether, chloroform or carbon disulphide. Methylene blue, methyl violet, acid green or iodococin imparted no stain³ to the paint film. Nor did the paint film answer the Molisch's test with α -naphthol.

These experiments show that the paintings have not been executed in *tempera* technique.

On treating a small fragment of the paint film with dilute hydrochloric acid, it disintegrated with evolution of carbon dioxide and separation of silica and the acid solution tested for calcium. Thus it was lime that had been used for binding the pigment. But since the pigments have not interfused or spread beneath the plaster ground,⁴ the technique is one of *lime medium*. This is also confirmed by the absence of brush marks.⁵ This is to be expected. The lime of the *rough plaster* has not been well prepared and consists mostly of unburnt lime, so that no *true fresco* work could have been executed on it. At the same time, the *fine plaster* of lime and calcium sulphate is so very thin that it could not have remained wet sufficiently long for the completion of the painting in *true fresco* style.

Since the technique employed is not *true fresco* but only *lime medium*, it is not possible to trace the joins⁶ in day to day's work and to determine the time taken in painting a scene. Such joins cannot easily be seen in *lime medium*. Even otherwise the joins could have been easily obscured by the coloured back ground. Further, the paintings have undergone such damage that it was very difficult to trace the joins.

The author desires to express his thanks to Mr. G. Yazdani, M.A., O.B.E., Director of Archaeology of H.E.H. the Nizam's Dominions, to Mr. J. F. Blakiston, formerly Director-General of Archaeology in India, and to Rao Bahadur K. N. Dikshit, the Director-General of Archaeology in India, and to Dr. F. H. Gravely, Superintendent of the Madras Government Museum, for their interest in these investigations.

¹ Martin de Wild—*The Scientific Examination of Pictures* (London: G. Bell & Sons, Ltd., 1929), p. 52.

R. J. Gettens and G. L. Stout—*The Stage Microscope in the routine Examination of Paintings—Technical Studies* (Harvard), 1935-36, Vol. IV, pp. 140-141.

² This is found in nature associated with rocks here and there about the caves

³ William Ostwald—*loc. cit.*

⁴ S. Paramasivan—*The Mural Paintings in the Brihadisvara Temple at Tanjore—An Investigation into the Method—Technical Studies* (1936-37), Vol. V, p. 236.

⁵ *Loc. cit.*, p. 234.

⁶ *Loc. cit.*, pp. 238-39.

APPENDIX C

Paithan Facsimile no. 3 By SYED YUSUF, Assistant Director of Archaeology.

As it now exists, is the headquarters of the Tahsil of the same name in the Aurangabād District or Dominion lying at a distance of 32 miles South-west of the City of Aurangabād. It is situated on the mouth of ruined houses, which having been destroyed every now and then, have assumed the shapes of small hillocks. The modern town, built on the top of the mounds, presents the appearance of a hill-station and attracts the sight of the visitor from a distance. Further, the river Godavari, taking a serpentine course and encircling the town on three sides—West, South and East—lends a peculiar charm to the landscape. Tall spires of Hindu temples, stepped Ghats along the banks of the river and lofty red-brick houses with rounded corners are the special feature of modern Paithan.

The origin of Paithan, as its very name testifies to, may be traced to those remote centuries of Indian civilisation when the land was the home of the ancient Dravidians. For the word 'Paithan' is of pure Dravidian extraction, signifying as it does, to the present day, a town of large dimensions. In early Buddhist times, however, the existence of a town, situated in the Godavari valley, the name very much approaching the name of the modern town of Paithan, seems to have been a well accepted fact.

In recent Pāli literature the name of 'Patitthana' has been recorded together with the names of other towns, Bhāradvāja, Chāmpa, Kāmpilla, Kosambī, Mithilā, Rajagaha, Roruka, Sagala, Sāvatthī, Ppālī, Vesālī, etc.,—towns that flourished in the days of the Buddha—6th century B.C. In addition, it may be added here that recent archaeological research and exploration has having led and identified the sites of a majority of these ancient towns. In the records and legends of the Bhikkhus, wandering teachers, mendicants and merchants, Patitthana has been mentioned as the Southern terminus of the Savatthi-Patitthana trade route, and further, it has been described as a city that nestled on the banks of the river Godavari. This helps a great deal in fixing with confidence the location of the ancient site of Patitthana which may now well correspond with the site of the modern town of Paithan on the bank of the river Godavari in the Aurangabād District of the British Dominion—the Nizam's Dominion.

In later records left by the Greeks, Asoka, Ptolemy, etc., this town has been called by a name, which, excepting for slight variations, is very much similar to its present name. Pleithān, as this town is named by the Greek traveller, Arrian, has been mentioned as a very flourishing city of the South, famous for its textiles, jewellery and bead industry. This city exported onyx stone in large quantities through Batunara (modern Bhatoach). Pliny, the Roman writer of the 1st century A.D., pays a high tribute to this town by stating that 'it is the glorious capital of the Āndhras', and Ptolemy, the Egyptian geographer and astronomer, travelling in India in the 1st half of the 2nd century A.D., recorded in his annals that 'Baithana' was the capital of 'Siro Polomaioi', and the author of the *Periplus* calls this town by the name of Poethana. Another name of this town which has been preserved in ancient records is 'Prati-thana'. The last mentioned name is to be found in the inscription on the Pithalkora Caves in the Aurangabād District and in the *Pratisthana Mahatmya*, a Hindu legendary account which deals with the events relating to the founding of this city. In one of Asoka's inscriptions a mention is made of Buddhist missionaries having been sent to the 'Petenikas', which can be no other than the people of Paithan.

Suffice it to say that though variously known as Patitthana, Pleithān, Baithana, Poethana, Prati-thana, etc., the city of Paithan found an important place in the writings of the ancients and it was behind no other town of any import in the old Buddhist days. At one time in the Indian history, there was no power in India equal in strength and prowess to the Āndhras, and Paithan having served as the capital of this dynasty retained, in its own turn, its traditional greatness.

1 This is a paper read before the Ninth Session of the All-India Oriental Conference held at Trivandrum from 20th to 22nd December, 1937.

Now, to turn to the Āndhras themselves,—to whose genus the name of Dāhīnāpata, and its ancient capital, Paithan, owes its greatness. Towards the end of the third century B.C. a warrior named Simuka uprooted the Sunga and Kānya dynasties which followed the great Mauryas and established an independent kingdom of his own and laid the foundation of a dynasty which later on came to be known in history as the Āndhras. Although very little is known of the genealogy of the Āndhra kings, and the history of this period is still almost quite obscure, yet from the epigraphical records left by the various members of the dynasty some information can be gathered about the name of the founder and some other prominent members of the House. For instance, the inscriptions in the Nānaghāt Caves near Bombay give the name of the founder, Simuka, and of some other members of the family, like Sri Satakarnī, Prince Haku Sri, Prince Sata, and Bhavada, etc. The inscriptions of the Nāsik Cave mention the name of King Gautamīputra Śataśī and record some of the important political events of his reign. They give, besides the name of Pratisthāna, the brother and successor of Simuka, and of Plumayī I. The Caves at Kanheri near Bombay record the name of Gautamīputra Sri Yajña Satakarnī, and the inscriptions on the stupas at Sanchi and Amrāoti mention the names of Satakarnī and Plumayī II. It was during the reign of the latter king that Ptolemy visited India, as he has mentioned the name of this monarch in his annals.

Originally, the Āndhra kings had their capital at Dhanyākatak (modern Amrāoti) near the delta of the Krishna but towards the end of the 1st century A.D. the Āndhras felt the necessity of having another capital in the North-west to protect their dominions from the incursions of the Northern tribes, like the Sākās, the Pahlavās, the Yāvanās, the Kaśhaharattās and others. In this way, the kingdom of the Āndhras was, for diplomatic reasons, divided into two parts, each with a separate capital at Dhanyākatak and Paithan, respectively. The fact that Pratisthāna (Plumayī) was the sub-capital of the Āndhras is evident from the inscription of the Pithalkhora caves as also from the writings of foreigners like Arrian, Pliny, Ptolemy and others. The branch of the Āndhras which established its capital at Paithan adopted the humble title of 'Āndhrabhritās'—the vassals of the Āndhras. Later on this dynasty took the title of 'Satavahānās'. The inscription of the Nāsik caves holds that Gautamīputra Satakarnī, the greatest of the monarchs of this line defeated the aggressors of the North,—the Sākās, the Yāvanās, the Pahlavās, and the Kaśhaharattās, and restored the glories of the Āndhra House. In commemoration of this event the Rāja performed the Asvamedha (Horse-sacrifice) and adopted the title of Satakarnī, which later on was changed into Satavahānā and thence into Shālīvāhān. The Shālīvāhān era, corresponding to 78 A.D., which is still in vogue in the Deccan, is supposed to have been inaugurated by this Rāja in order to keep fresh the memory of his victory won over the northern invaders and, further, the family-name of the dynasty, 'Satavahānā' seems to have been associated with the title adopted by this king.

Apart from the material which these inscriptions furnish about the political history of the period they give us an idea of the intellectual, social and religious conditions of the times. The Āndhra kings were great patrons of art and architecture, as the rock-hewn temples of the Bombay Presidency and some of the caves in H.E.H. the Nizam's Dominions bear testimony to the aesthetic and artistic genius of these monarchs. The language used in their inscriptions was Prakrit and the names of the kings were generally indicated by means of metronymics—for example, Gauṭamī-putra Satakarnī, i.e., Satakarnī, the son of Gauṭamī, etc. As regards the religion of the Āndhras, it can be gathered from their epigraphical records and architectural remains that they professed Brahmanism, and some as they endowed grants to the followers of that religion and erected *chāityas*, *vihāras* and *stūpas* for the use of the Buddhists.

From the humble attempt made to draw up a short sketch that has been presented in the above lines some idea can be formed of the Āndhras and their 'Glorious Capital'. It was in due consideration of the archaeological importance of this site, therefore, that Mr. G. Yazdani, O.B.E., our Director, drew the attention of the authorities towards a regular excavation scheme of the site in the year 1914 and expressed the eager hope that if excavations are conducted at Paithan they would 'throw ample light on the history of the Āndhra kings, of which at present only the barest outline is known'—

(vide *Annual Report of the Archaeological Department, H.E.H. the Nizam's Government, for the year 1914-15*, pp. 10-11, and for the year 1914-20, p. 8).

The hope cherished by the Director was realized to a very great extent when the actual operations were started during the present year. In May, 1937, the operations were commenced with making experimental shafts on four promising sites on the mounds near the Nāg Ghāt,—a monument of the pre-Neval Hindu period, situated to the South-west of modern Paithan and constructed on the Northern bank of the Godavari. The shafts were gradually extended into big trenches as they revealed finds both in the nature of structural remains and smaller antiquities.

The trenches, were taken to an average depth of 18 ft. and in some places the digging had to be carried to over 25 ft. In one of the trenches traces were noticed of six layers of previous habitation—one built over the remains of the other—and the shifting operations revealed smaller antiquities belonging to the various periods, which almost completely tallied with the cultural characteristics of each period. For instance, the top-most layer of buildings—constructed of stone in lime and brick or mud—found at a depth of about 4 ft. from surface, exposed to view British silver rupees, gold and silver jewellery, copper and pottery utensils, etc., of recent origin. The next *stratum* appeared to belong to the 18th and 19th centuries and yielded, along with other objects, coins of the early Āṣaf Jāhī monarchs, and the third layer was found to contain the antiquities and silver and copper coins of the Mughal period. As regards the fourth *stratum*, the most interesting discovery made about it was that the walls and foundations of a former layer (the fifth one), were generally found tilted and slanting and in some cases traces were also visible of the entire walls having fallen flat. This discovery gave room for the logical conjecture that the site was once smitten by a flood and was washed clean of all traces of habitation. It may not be out of place to mention here that the local nickname, 'Ulti-nagari'—capsized town, by which Paithan is still remembered, seems to refer to some such calamity and may well confirm this conjecture. Chief among the minor antiquities discovered in association of these layers were some Tughluq and Bahmani coins and these finds tended to show that the suspected flood must have occurred some time towards the close of the fourteenth or the beginning of the fifteenth century.

In order to approach the fifth layer the trench was taken to a depth of over 8 ft. Subsequently, when both the fourth and fifth layers were examined the operations were continued further in the search for any more vestiges of old habitation. But no traces of any structural remains were found till the hard digging of another 8 ft. had actually been done. At first this long gap looked somewhat tiresome and discouraging but the finds of minor objects—specially of old Āṇḍhra coins—afforded some timely relief and consolation to the excavator and at the same time extended hopes of another hidden *stratum* underneath. The sixth layer, which will be described in detail below, was at last discovered under a thick layer of sand and river-silt at a total depth of 16 ft. from surface level. The remains of this layer when fully exposed were found to comprise two oblong structures, built of burnt bricks and placed side by side, with a 3 ft. wide lane separating them. The bricks used were of a very large size varying between 14 and 16 inches in length and no trace of any lime was found anywhere in the construction. Mud mortar has been used for cementing together the bricks and this fact combined with the size of the bricks establishes the antiquity of the structures, for it shows that the buildings were constructed long before the use of lime came into vogue. Another special feature of these structures was that they were found to be placed in strict regard to cardinal points, with their longer axes pointing towards the West. The walls of the structures were extant up to a height of about 3½ ft. and their outer surfaces had rounded mouldings, which have been carved out of full bricks. The bigger of these buildings has three compartments arranged in a line—a rectangular tapering hall (10' 3" × 5' 3"), preceded by an oblong antechamber (13' 0" × 4' 7") which adjoins a rectangular chamber (13' 0" × 9' 9"). This chamber has a recessed niche (6' 0" × 3' 3"), towards its Western end. The other building has also a rectangular hall (19' × 12'), surrounded by a gallery (3 ft. wide), and possesses a similar recessed niche towards its Western end.

In the same *stratum* but a little lower (4 ft.) than the level of the buildings and at a distance of about 200 yds. to South of them were unearthed traces of a brick drain. The drain has been constructed of bricks of an extraordinarily large size (20½" × 8" × 3½") and no lime mortar was found

anywhere in the construction. Three cylindrical brick structures (each $4\frac{1}{2}$ ft. in diameter) were found in a line with the drain but as these structures were not connected with the drain in any manner their object could not be explained unless the drains are taken for channels supplying water to houses from the circular constructions which may be 'wells'.

The proof about the antiquity of the buildings and the drain mentioned above, apart from the size of the bricks and the absence of lime in their construction, is to be met with in the nature of the smaller antiquities found in close association with them. Square copper coins of a unique type, hitherto unidentified, were discovered in large numbers in level with these remains and a lump of ten such coins was found near the bed of the drain. The coins shall be described in greater detail presently.

Excavation in the other trenches, besides those with the brick buildings and the drain mentioned above, did not reveal structural remains of any significance, although the trenches were taken in some places to a depth of over 25 ft. But these trenches were highly fruitful so far as the discovery of smaller antiquities was concerned.* Noteworthy among the finds were beads of burnt clay, lapis-lazuli, agate, crystal and cornelian, terracotta figurines and moulds, pottery utensils with incised marks, shell objects, etc., which from their technique and workmanship can well stand comparison with similar objects recently discovered by the Hyderabad Archaeological Department at the prehistoric site of Maski (Raichūr District).

Among the minor antiquities of a little later date are the lump of the ten square copper coins (each $\frac{3}{4}$ " square) sticking to one another and betraying marks of a cloth in which they were tied up, a hoard of similar loose coins, as well as a collection of four smaller circular punch-marked coins and a round lead coin. The last mentioned coin is, beyond doubt, of the Āndhras, as similar coins have been previously found on other old Indian sites and identified by numismatists. The square copper coins also with slight variations appear to belong to the same dynasty, as like the Āndhra coins found at Taxila and identified by Cunningham, these coins also bear the emblem of the Bodhi Tree and the Swāstika, the latter sign in this case having been represented by a cross. The coins, which are quite unique in these respects, are at present under scrutiny and when identified may add very valuable information to our knowledge of the coinage of ancient India and at the same time throw considerable light on the history of the Āndhra dynasty.

In short, the excavations conducted by the Department during the present year, though of an experimental nature, led fortunately to the discovery of antiquities of a culture which did not end only with the Āndhra period but penetrated even beyond it far into the darkest recesses of India's unknown and obscure history. As there is an extensive field for work in Paithan and as the new discoveries have almost practically established the identity of ancient Paithan with the site recently opened and examined by the Department, H.E.H.'s Government have graciously decided to continue the work in future years and it is hoped that when the operations are conducted on a larger scale they would throw a flood of light on the history of the Āndhra dynasty and may as well lead to discoveries of a still earlier civilization.

* The smaller antiquities and coins have been described more elaborately in another paper on Paithan Excavations read by Mr. Syed Yusuf, Assistant Director of Archaeology, before the XXth Congress of International Orientalists held at Brussels in September, 1938. The paper will appear as an Appendix to the *Annual Report* for 1348 F. (1938-39 A.C.).

APPENDIX D

A Sanskrit Inscription from Kalyāni.

By R. M. JOSHI, M.A., Research Scholar, Archæological Department.

The estampages of this inscription were kindly handed over to me by G. Yazdani, Esq., M.A., O.B.E., Director of Archæology. The inscription is lying loose in the Husaini Bārgāh in the fort at Kalyāni, which is 32 miles west of Gulbarga. Local enquiries elicited the information that the inscription was first discovered in Yella Nagar (Allāh Nagar?), a locality of the place, and thence it was taken to the fort.

The inscription is incised on a black stone. The incised portion measures three feet nine and a half inches in length and one foot nine and a half inches in breadth at the upper end and one foot eight and a half inches at the lower end. Above the incised portion there is the digit of the moon (3' 7" in diameter) to the left and a circle (3" in diameter) representing the sun to the right. The inscription has 32 lines. The beginning of the 31st and 32nd line is missing because the stone is slightly damaged there. On the average there are 21 letters in each line. The height of the letters varies from 1½" to ¾". The alphabet is old Nāgarī of the Northern type and resembles Daulatabād plates of Jagadekamalla 1017 A.D., published as monograph No. 2 in the Hyderabad Archæological Series. The use of both the *Prishṭha* Mātrā (back stroke) and the *Śirshamātrā* (head stroke) is freely made. The language is Sanskrit. The text is partly prose and partly metrical. The verses begin from line 14. The metre used is Sārdūla Vikridatam (12-7-19 ma, sa, ja, sa, ta, ta, and ga). The language is grammatically correct. Orthographically only one thing is remarkable and that is the use of S for Ś.

The inscription bears the date twice, once at the beginning in figures and next in line 18 expressed in significant words. Both the dates perfectly agree with each other. It is Monday the fifteenth day of the bright half of Kārtika, Śaka 1248, cycle year Kshaya corresponding to the 10th November, 1326 A.D.

The inscription refers itself to the reign of Sultān Muḥammad who had his chief minister Malik Kamadīn performing all the administrative duties in Maharashtra. He had appointed Khwaja Ahmad at 'Kalyān'. Due to a mutiny the local temple was defiled. Attempts were made to find out the image and instal it in the former place. Nenapāl, the son of Thākur Malapo, perhaps out of hesitation, consulted the local Qāzī who spoke as follows:—

'That is your religious and family duty and you should act up to it.'

So while Sultān Muḥammad, the 'lord of the world' was reigning supreme and his minister Kamadīn was prosperous, Kalyān, with its increasing glory, had the chariot of Śambhu moving freely. Naina Sinhā's son, the best of the Kayasthās, who was perhaps a worshipper of Vishnu did not like the idea. In 1248 Sakā cyclic year Kshyā on the full moon day in Kārtika when at Śeshachala God Thākur is generally worshipped, God Siva, Madhukeshwar was installed. Even God Madhukeshwar with his ornaments of serpent and his prowess, as one who drank the deadly poison, is quite potent to lend brightness to the intellect of his devotees. Through his benevolence the whole world will have its desires fulfilled. The inscription is written by Vijayaditya.

Malik Kamadīn may be Qivāmuddīn, titled as Qutluḡ Khān. The rebellion referred to must be the one raised by Bahā'uddīn Gurshāsp, sister's son to Ghiyath'uddīn Tughluq, and therefore first cousin to Muḥammad Tughluq. He held the fief at Sagar about 10 miles North of Shorapur and enjoyed a great influence in the Deccan.

The deity referred to is God Madhukeshwar. Madhukeshwar, i.e. Siva is the family deity of the Kaḍambās of Banbāsī, and the temple of this God is still there (*Plate CXXXVII Chalukyan Architecture* by Cousins). It is really strange that the name of Madhukeshwar should not appear in the other Chalukyan inscriptions. Even at Kalyāni there is nothing to indicate the existence of the temple dedicated to God Madhukeshwar. It is quite remarkable that the local Muslim officer should be consulted in the matter of reinstalling an image in the Hindu temple and that he should give his assent inviting their attention to the fact that it is their religious duty and they should act according to it. Even the dignified way in which the Muslim names, specially those of Sultān Muḥammad and

but the best of Kayasthas, the intelligent son of Nain Sinha, was put to shame (14 to 18). In Śaka 1248 (Eight preceded by four, suggested by the number of oceans, then by two suggested by the yearly halves and preceded by one) cyclic year Kshaya, in the month of Kārtika, bright half, on the full moon day (on the Rohini Nakshatra day) when on the Śeshachala mountain Lord Vishnu is also glorified, Lord Madhukeshwar was reinstalled (19 to 22). Lord Madhukeshwar the greatest amongst gods with ornaments like the cobra whose deadly poison he drank to free the world from its fatal clutches, also blesses his devotees by brightening their intellect (23 to 25). This benevolence of the god is permanently associated with him. The worshippers of this god receive propitiation from the Lord and their worldly aspirations are fulfilled (25 to 29).The inscription has been scribed by Vijayaditya (30 to 32).

APPENDIX E

Diary of the Director for the year 1346 F. (1936-37 A.C.)

Month	Date	Place
1346 F. (1936-37 A.C.)		
<i>Āḍhur to Baihman</i> (October to December)	1st <i>Āḍhur</i> to 20th <i>Baihman</i> .. (6th October to 23rd December)	On privilege leave
<i>Baihman to Isfandār</i> (December to January)	21st <i>Baihman</i> to 12th <i>Isfandār</i> (24th December to 14th January)	Duty at headquarters
<i>Isfandār</i> (January)	13th to 17th (15th to 19th)	Tour to Bombay
<i>Isfandār to Kḥurdād</i> (January to April)	18th <i>Isfandār</i> to 4th <i>Kḥurdād</i> .. (20th January to 8th April)	Duty at headquarters
<i>Kḥurdād</i> (April)	5th to 8th (9th to 12th)	Tour to Bidar
"	9th to 15th (13th to 19th)	Duty at headquarters
"	16th to 17th (20th to 21st)	Tour to Gulbarga
<i>Kḥurdād</i> (April to May)	18th to 27th (22nd April to 1st May)	Duty at headquarters
<i>Kḥurdād to Tīr</i> (May)	28th <i>Kḥurdād</i> to 20th <i>Tīr</i> .. (2nd to 25th)	Tour to Aurangabād and Ajanta
<i>Tīr</i> (May)	21st to 24th (26th to 29th)	Duty at headquarters
<i>Tīr</i> (May to June)	25th to 28th (30th May to 2nd June)	Tour to Bidar
<i>Tīr to Shahrīwar</i> (June to August)	29th <i>Tīr</i> to 30th <i>Shahrīwar</i> .. (3rd June to 5th August)	Duty at headquarters
<i>Shahrīwar to Mihr</i> (August)	31st <i>Shahrīwar</i> to 7th <i>Mihr</i> .. (6th to 13th)	Tour to Burhānpūr and Aurangabād
<i>Mihr to Ābān</i> (August to October)	8th <i>Mihr</i> to 30th <i>Ābān</i> .. (14th August to 5th October)	Duty at headquarters
Duty at headquarters	.. ..	239 days
Tour ..	.. ..	47 "
Privilege leave	.. ..	79 "
	TOTAL	365 days

APPENDIX F

Diary of the Assistant Director for the year 1346 F. (1936-37 A.C.)

Month	Date			Place
1346 F. (1936-37 A.C.)				(The Assistant Director officiated for Director from 1st Ādhur to 15th Baihman)
<i>Ādhur to Dai</i> (October to November)	1st Ādhur to 3rd Dai .. (6th October to 7th November)			Duty at headquarters
<i>Dai</i> (November)	4th to 6th (8th to 10th)			Tour in the Warangal District
"	7th to 12th (11th to 16th)			Duty at headquarters
"	13th to 16th (17th to 20th)			Tour to Aurangabād
<i>Dai to Khurdād</i> (November to April)	17th Dai to 23rd Khurdād .. (21st November to 27th April)			Duty at headquarters
<i>Khurdād to Shahrīwar</i> (April to July)	24th Khurdād to 9th Shahrīwar .. (28th April to 15th July)			Paithān Excavations
<i>Shahrīwar to Ābān</i> (July to October)	10th Shahrīwar to 30th Ābān .. (16th July to 5th October)			Duty at headquarters
Duty at headquarters	..	..	..	279 days
Tour .. ..	..	..	..	86 ..
TOTAL				365 days

APPENDIX G

Diary of the Curator, Hyderabad Museum, for the year 1346 F. (1936-37 A.C.)

Month	Date			Place
1346 F. (1936-37 A.C.)				
<i>Ādhur</i> (October)	1st to 16th (6th to 21st)	..	..	Duty at headquarters
"	17th (22nd)	..	..	Visit to Ḥashmatpet
"	18th to 25th (23rd to 30th)	..	..	Duty at headquarters
"	26th (31st)	..	..	Visit to Ḥashmatpet
<i>Ādhur to Dai</i> (November)	27th <i>Ādhur</i> to 3rd <i>Dai</i> (1st to 7th)	..	..	Duty at headquarters
<i>Dai</i> (November)	4th (8th)	..	..	Visit to Ḥashmatpet
"	5th to 23rd (9th to 27th)	..	..	Duty at headquarters
"	24th (28th)	..	..	Visit to Ḥakimpet
<i>Dai</i> (November to December)	25th to 29th (29th November to 3rd Decem- ber)	..	..	Duty at headquarters
<i>Baiḥman</i> (December)	1st (4th)	..	..	Visit to <u>Shaiḵh</u> -ki-Masjid, Golconda
"	2nd to 11th (5th to 14th)	..	..	Duty at headquarters
"	12th (15th)	..	..	Visit to Golconda
<i>Baiḥman to Isfandār</i> (December to January)	13th <i>Baiḥman</i> to 12th <i>Isfandār</i> (16th December to 14th January)	..	..	Duty at headquarters
<i>Isfandār</i> (January)	13th to 15th (15th to 17th)	..	..	Tour to Bombay
"	16th to 24th (18th to 26th)	..	..	Duty at headquarters
"	25th to 26th (27th to 28th)	..	..	Tour to Warangal
<i>Isfandār to Urdābihishṭ</i> (January to March)	27th <i>Isfandār</i> to 10th <i>Urdā- bihishṭ</i> (29th January to 14th March)	..	..	Duty at headquarters
<i>Urdābihishṭ</i> (March)	11th (15th)	..	..	Visit to Golconda Tombs

APPENDIX J-- contd.

Serial No.	Title	REMARKS
2700	The Quarterly <i>Journal</i> of the Kannada Literary Academy, Vol. XXI, no. 3, and Vol. XXII, nos. 1-2	Presented by the Publishers
2701	Quarterly <i>Journal</i> of the Mythic Society, Vol. XXVII, nos. 1-4, and Vol. XXVIII, no. 1	Do.
2702	—, —, Index to Vol. XXVII	Do.
2703	Oriental Institute <i>Journal</i> , University of Hawaii, Honolulu, June, 1937	Do.
2704	<i>Bulletin</i> de L'Ecole Francaise D'Extreme-Orient, Tome XXXV, Fasc. 2, and Tome XXXVI, Fasc. 1	Do.
2705	<i>Bulletin</i> of the School of Oriental Studies, Vol. VIII, part 4, and Vol. IX, part 1	Do.
2706	<i>Ars Islamica</i> , Vol. II, part 2 and Vol. III, parts 1 and 2 ..	Purchased
2707	—, —, Volume commemorating the Centenary of the University of Michigan in Ann Arbour (1837-1937)	Do.
2708	The <i>Dacca University Studies</i> , Vol. I, no. 2	Presented by the Publishers
2709	<i>Man in India</i> , Vol. XV, no. 4, Vol. XVI, nos. 2-4 and Vol. XVII, nos. 1-3	Do.
2710	The <i>Mahabodhi</i> , Journal of the Maha Bodhi Society, Vol. 44, no. 12, and Vol. 45, nos. 1-12.	Do.
2711	<i>Indian Culture</i> , Vol. III, nos. 3-4, and Vol. IV, no. 1 ..	Purchased
2712	—, —, Index to Volume III	Do.
2713	<i>Indian Art and Letters</i> , Vol. X, no. 2	Presented by the Publishers
2714	<i>Antiquity</i> , a quarterly review of Archæology, Vol. XI, nos. 41-44	Purchased
2715	The <i>Karnataka Historical Review</i> , Vol. III, nos. 1-2 ..	Presented by the Publishers
2716	The <i>National Geographic Magazine</i> , Vol. LXXI, nos. 1-6, and Vol. LXXII, nos. 1-6	Purchased
2717	<i>D'jawa</i> , Tijdschrift van Het Java Instituut, 16e Jaargang, nos. 4-6, and 17e Jaargang, nos. 5-6	Presented by the Publishers
2718	The <i>Federated India</i> , Vol. I, no. 3	Do.
2719	Hyderabad Geological Series, <i>Bulletin</i> no. 2; A brief outline of the Geological History of Hyderabad State with a reference to its mineral resources (1937)	Presented by H.E.H. the Nizam's Government
2720	<i>Samadhi</i> , Collana Di Studi Orientali, Series 1a Fasc. II, La Vajasaneyi—Sambhita-Upanishad	Presented by the Publishers
2721	—, —, Series 1a Fasc. III, La Mandukya—Upanishad ..	Do.

APPENDIX J *contd.*

Serial No.	Title	REMARKS
2738	<i>Kroeber, A. L.</i> ; Archaeological Expeditions in Peru (part IV); Canete Valley. Second Marshall Field Archaeological Expedition to Peru (Field Museum of Natural History, Vol. II, no. 4)	Presented by the Publisher
2739	<i>Martin, P. S.</i> ; Lowry Ruin in South-western Colorado, Marshall Field Archaeological Expedition to Columbia, 1922-23. Anthropological Series, Field Museum of Natural History, Vol. XXIII, no. 1. (Publication 356)	Do.
2740	<i>Mason, J. J.</i> ; Archaeology of Santa Marta, Columbia. The Tairona Culture, part II, section 1: Objects of Stone, Shell, Bone and Metal. Marshall Field Archaeological Expedition to Columbia, 1922-23. Anthropological Series, Field Museum of Natural History, Vol. XX, no. 2. (Publication 358)	Do.
2741	<i>Nazim, Dr. M.</i> ; Bijapur Inscriptions. Memoir of the Archaeological Survey of India, no. 49	Presented by the Government of India
2742	<i>Nelson, N. C.</i> ; The Antiquity of Man in America in the light of Archaeology. From the Smithsonian Report for 1935 (Publication 3372)	Presented by the Publishers
2743	<i>O'Neale, L. M.</i> ; Archaeological Explorations in Peru (Part III). Textiles of the Early Nazca Period. Second Marshall Field Archaeological Expedition to Peru. (Field Museum of Natural History, Vol. II, no. 3)	Do.
2744	<i>Pfeiffer, R. H.</i> ; Nuzi and Hurrians; the Excavations at Nuzi (Kirkuk, Iraq) and their contribution to our knowledge of the History of the Hurrians. From the Smithsonian Report for 1935. (Publication 3374)	Presented by the Publishers
2745	<i>Popenoe, D. H.</i> ; The Ruins of Tenampua, Honduras. From the Smithsonian Report for 1935. (Publication 3375)	Do.
2746	<i>Roberts, F. H. H., Jr.</i> ; A Survey of South Western Archaeology. From the Smithsonian Report for 1935. (Publication 3373)	Do.
2747	<i>Thompson, J. E.</i> ; Archaeology of South America—Field Museum of Natural History	Do.
2748	<i>Wales, Dr. H. G. Q.</i> ; A newly explored Route of Ancient Indian Cultural Expansion, introducing some new views on the History of the Sailendra Empire of Indonesia. Reprinted from Indian Art and Letters, Vol. IX, no. 1	Do.
2749	<i>Yazdani, G.</i> ; The Mathnavi of Jalāluddīn Rūmī, reproduced from a manuscript dated 1103 H. and written by Ustād 'Abdul Karīm, son of Mīr Mālīkī, son of Mīrza Ibrāhīm, son of 'Imād-al-Ḥusainī	Presented by H.E.H. the Nizam's Government
2750	—, —, Rock-hewn Temples of Aurangabād	Do.
2751	—, —, Indian Art of the Buddhist Period, with particular reference to the Frescoes of Ajanta. (<i>Paper</i> read before the Royal Asiatic Society on December 4, 1936)	Do.

APPENDIX J—*contd.*

Serial No.	Title	REMARKS
	ART, ARCHITECTURE, ETC.	
2752	<i>Cole, H. H.</i> ; Tomb of Jahāngīr at Shāhdara near Lahore. Preservation of National Monuments, INDIA	Purchased
2753	—, —, Golden Temple at Amritsar, Punjab do.	Do.
2754	—, —, Great Temple to Siva and his Consort at Madura do. do. do.	Do.
2755	—, —, Agra and Gwalior do. do.	Do.
2756	—, —, Meywar do. do. do.	Do.
2757	—, —, Buildings in the Punjab do. do.	Do.
2758	—, —, Temples at Trichinopoly do. do.	Do.
2759	—, —, Great Buddhist Tope at Sanchi do. do.	Do.
2760	—, —, Delhi do. do. do.	Do.
2761	—, —, Great Buddha Sculptures from Yusufzai do.	Do.
2762	—, —, Illustrations of Ancient Buildings in Kashmir do. do.	Do.
2763	<i>Cousens, H.</i> ; Portfolio of Illustrations of Sind Tiles: Issued by the Government of India	Do.
2764	<i>Fergusson, J.</i> ; Architecture at Beejapoor, with an historical and descriptive memoir by Captain Meadows Taylor	Do.
2765	—, —, Architecture in Dharwar and Mysore ..	Do.
2766	<i>Fry, R., Rackham, B., Binyon, L., Yelts, W. P., Kendrick, A. F., Siren, O. and Winkworth, W. W.</i> ; Chinese Art, an introductory review of Painting, Ceramics, Textiles, Bronzes, Sculpture, Jade, etc. (Burlington Magazine Monographs)	Do.
2767	<i>Gill, E.</i> ; Visvakarma, examples of Indian Architecture, Sculpture, Painting, Handicraft, chosen by A. K. Coomaraswamy. First Series: One hundred examples of Indian Sculpture (1914)	Do.
2768	<i>Gravelly, F. H.</i> ; An Outline of Indian Temple Architecture. Bulletin of the Madras Government Museum	Presented by the Publishers
2769	<i>Griggs, W.</i> ; Photographs and Drawings of Historical Buildings, INDIA. 100 plates reproduced	Purchased
2770	<i>Hobson, R. L.</i> ; Chinese Art: One hundred plates in colour reproducing pottery, porcelain of all periods, jades, lacquer paintings, bronzes, furniture, etc.	Do.
2771	<i>Kramrisch, Dr. St.</i> ; Indian Sculpture: The Heritage of India Series	Do.

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Serial No.	Title	REMARKS
2772	<i>Kramrisch, Dr. St.</i> ; A Survey of Painting in the Deccan, published by the Department of Archæology, Hyderabad, in co-operation with the India Society	Presented by H.E.H. the Nizam's Government
2773	<i>Watt, G. E., and Brown, P.</i> ; Indian Art at Delhi (1903), being the official catalogue of the Delhi Exhibition, 1902-3	Purchased
MUSEUMS		
2774	<i>Hendley, T. H.</i> ; Handbook of the Jeypore Museum ..	Presented by the Jaipur Museum
2775	<i>Markham, S. F., and Hargreaves, H.</i> ; The Museums of India	Presented by the Publishers
2776	<i>Annual Report</i> on the working of the Rajputana Museum, Ajmer, for the year ending 31st March, 1935, and for the year ending 31st March, 1936	Presented by the Rajputana Museum
2777	<i>Annual Report</i> of the Government Museum and Connemara Public Library, Madras, for the years 1935-36 and 1936-37	Presented by the Madras Museum
2778	<i>Annual Report</i> of the Watson Museum of Antiquities, Rajkot, for the years 1935-36 and 1936-37	Presented by the Watson Museum
2779	<i>Annual Report</i> on the working of the Curzon Museum of Archæology, Muttra, for the year ending 31st March, 1936	Presented by the Muttra Museum
2780	<i>Annual Report</i> of the Director to the Trustees for the year 1935—Field Museum of Natural History, Chicago. (Publication 354). Report Series, Vol. 10, no. 3	Presented by the Publishers
2781	<i>Report</i> on the Royal Scottish Museum, Edinburgh, for the year 1936	Presented by the Edinburgh Museum
EPIGRAPHY AND INSCRIPTIONS		
2782	<i>Epigraphia Indica</i> , Vol. XXII, part VII, and Vol. XXIII, parts 1-2	Presented by the Government of India
2783	<i>Epigraphia Indo-Moslemica</i> , 1932-33	Do.
2784	<i>Annual Report</i> on South Indian Epigraphy for the years ending 31st March, 1933, and 31st March, 1934	Do.
2785	<i>South Indian Inscriptions</i> (Text), Vol. VIII—Miscellaneous inscriptions from the Tamil, Malayalam, Telugu and Kannada Countries, edited by K. S. Iyar, Superintendent of Epigraphy. New Imperial Series, Vol. LIV, A.S.I.	Do.
HISTORY, GEOGRAPHY AND TRAVELS		
2786	<i>Altekar, A. S.</i> ; History of Benares, from Prehistoric Times to the Present Day	Purchased
2787	<i>Garrat, G. T.</i> ; The Legacy of India	Do.
2788	<i>Levi, S., Przyluski, J., and Bloc, J.</i> ; Pre-Aryan and Pre-Dravidian Indias	Do.

APPENDIX J—*contd.*

Serial No.	Title	REMARKS
2789	<i>Mitra, P.</i> ; Prehistoric India, its place in the World's culture	Purchased
2790	<i>Pradhan, S. N.</i> ; Chronology of Ancient India	Do.
2791	<i>Panah, A. J. M.</i> ; A Detailed Geographical Sketch of His Highness the Nizam's Dominions in Urdu (1886)	Do.
2792	<i>Saletore, B. A.</i> ; History of Tuluva, Vol. I	Presented by the Author
2793	<i>Smith, V.</i> ; The Oxford History of India, Second Edition ..	Purchased
2794	<i>Taba Taba, S. A.</i> ; Burhān-i-Ma'āthir (revised Persian edition)	Do.
2795	<i>Wafa, M. H.</i> ; Āsafnāmāh, Vol. VII (Urdu)	Do.
2796	<i>The Cambridge History of India</i> , Vol. IV	Do.
2797	The Handy Royal <i>Atlas</i> of Modern Geography with introduction by T. A. Smith	Do.
2798	Bacon's Large <i>Excelsior Atlas</i> of the World with Index ..	Do.
2799	Philip's Record <i>Atlas</i> , with a new Gazetteer Index of 26,000 names, edited by G. Philip	Do.
GUIDES AND PLANS		
2800	<i>A Guide to Hyderabad</i> , Compiled on the occasion of the 24th Session of the Indian Science Congress Association held at Hyderabad (1937)	Presented by the Publishers
2801	—, —, Urdu Edition	Do.
2802	<i>Nizam's State Railway Excursion Guide-books</i> ,—Nizam Sagar, Pocharam and Medak	Do.
2803	—, —, Warangal, Palampet and Hanamkonda ..	Do.
2804	<i>Campbell, A. C.</i> ; Glimpses of the Nizam's Dominions, being an exhaustive Photographic History of the Hyderabad State	Purchased
2805	<i>Garde, M. B.</i> ; A Handbook of Gwalior	Presented by the Publishers
2806	<i>Mudiraj, K. S.</i> ; Pictorial Hyderabad, Vol. II	Purchased
2807	<i>Road Map of Hyderabad</i> (Scale 1"=8 miles) prepared by the Public Works Department, H.E.H. the Nizam's Government	Do.
ICONOGRAPHY AND RELIGION		
2808	<i>Dubreuil, G. J.</i> ; Iconography of Southern India, translated into English by A. C. Martin	Do.
MISCELLANEOUS LITERATURE		
2809	<i>Brody, Von A.</i> ; Der Misna—Traktat <i>Tamid</i> —Inaugural Dissertation, (Upsala 1936)	Presented by the Publishers

APPENDIX J—contd.

Serial No.	Title	REMARKS
2810	<i>Ishaque, M.</i> ; Sukhanvarān-i-Īrān Dar 'Aṣr-i-Ḥāzīr; Poets and Poetry of Modern Persia, Vol. II	Purchased
2811	<i>Linguistic Survey of India</i> , Vol. I, part IV, Comparative Vocabulary	Presented by the Government of India
2812	—, —, Vol. VIII, part II	Do.
2813	—, —, Vol. IX, part IV	Do.
2814	—, —, Vol. X	Do.
2815	<i>Explorations and Field work of the Smithsonian Institution in 1936.</i> (Publication 3407)	Presented by the Publishers
2816	<i>Transactions of the Carmarthenshire Antiquarian Society and Field Club</i> , part LXIII (1936) and part LXIV (1937)	Do.
2817	<i>Majma'ul-Bahrain</i> , or the Mingling of the Oceans, by Prince Muḥammad Dāra Shikuh, translated into English by M. Mahfuz-ul-Haq. Bibliotheca Indica : a Collection of Oriental Works	Purchased
2818	<i>Vijayanagara Sexcentenary Commemoration Volume</i> , Karnatak Historical Research Society	Presented by the Publishers
2819	<i>Inspection Notes of the tour of Raichur and Mahbubnagar Districts</i> by the Hon'ble Member, P.W.D., H.E.H. the Nizam's Government, (Isfandār, 1346 F.)	Presented by H.E.H. the Nizam's Government
2820	—, —, Aurangabād District, (Shāhrewar, 1346 F.) ..	Do.
2821	<i>Trade Statistics</i> , H.E.H. the Nizam's Dominions, with a review for 1344 F. (1934-35 A.D.)	Do.
2822	<i>Retail and Wholesale Prices in the Hyderabad State</i> from 1330 to 1340 F. (1920-21 to 1930-31 A.D.) issued by the Department of Statistics, H.E.H. the Nizam's Government : Second Issue	Do.
2823	<i>Table of Rainfall</i> recorded at stations showing the Daily, Monthly and Annual Rainfall in H.E.H. the Nizam's Dominions for the years 1935 and 1936	Do.
2824	<i>Live-stock Census</i> of H.E.H. the Nizam's Dominions for 1935 (1344 F.)	Do.
MISCELLANEOUS REPORTS		
2825	<i>Annual Report of the Varendra Research Society</i> for 1935-36	Presented by the Varendra Research Society
2826	<i>Annual Report of the working of the Co-operative Societies</i> in H.E.H. the Nizam's Dominions for the year 1344-45 F. (1935-36 A.D.)	Presented by H.E.H. the Nizam's Government
2827	<i>Administration Report of the Hyderabad City Drainage Works</i> for the year 1344 F. (1934-35 A.D.)	Do.

Appendix J—concl'd.

Serial No.	Title	REMARKS
2828	Administration <i>Report</i> of the Customs Department of H.E.H. the Nizam's Government for the year 1345 F.	Presented by H.E.H. the Nizam's Government
2829	Administration <i>Report</i> of the Hyderabad District Police for the year ending 1345 F.	Do.
2830	Administration <i>Report</i> of H.E.H. the Nizam's Regular Forces for the years 1344 and 1345 F. (Urdu)	Do.
2831	Administration <i>Report</i> of the Lunatic Asylum of H.E.H. the Nizam's Government for the years 1344 and 1345 F.	Do.
2832	<i>Report</i> on the Administration of H.E.H. the Nizam's Dominions for the year 1343 F. (1933-34 A.D.)	Do.
2833	<i>Report</i> on the Administration of the Medical and Sanitation Departments, H.E.H. the Nizam's Government, for the year 1343 F.	Do.
2834	<i>Report</i> on the Administration of the Court of Wards Department for the year 1344 F. (1934-35 A.D.)	Do.
2835	<i>Report</i> on the Administration of the Department of Statistics for the year 1344 F. (1934-35 A.D.)	Do.
2836	<i>Report</i> on the Administration of the Customs Department for the year 1345 F. (Urdu)	Do.
2837	<i>Report</i> on the Administration of the Jails of H.E.H. the Nizam's Government for the years 1344 and 1345 F.	Do.
2838	<i>Report</i> on the Administration of the Hyderabad City Police for the years 1344 and 1345 F.	Do.
2839	<i>Report</i> on the Progress of the Hyderabad City Improvement Board for the years 1344 F. (1934-35 A.D.) and 1345 F. (1935-36 A.D.)	Do.
2840	<i>Report</i> on the Progress of the Osmania University for the years 1933-34 and 1934-35 A.D.	Do.
2841	<i>Report</i> on the Progress of the Osmania University Buildings Project for the year 1345 F. (1935-36 A.D.)	Do.
2842	<i>Report</i> on the Public Instruction in H.E.H. the Nizam's Dominions for the years 1341 F. (1931-32 A.D.) and 1342 F. (1932-33 A.D.)	Do.
2843	<i>Report</i> on the Fifth Horticultural and Poultry Show, Hyderabad (1935)	Do.

APPENDIX K

List of Photographic Negatives prepared by the Office of the Director of Archaeology, Hyderabad, during the year 1346 F. (1936-37 A.C.)

Serial No.	Locality	Description	Size
1636	Paithan (Aurangabād District)	Panoramic view of the town of Paithan from across the river Godavari	8½" x 6½"
1637	"	General view of the Nāg Ghāt	"
1638	"	General view of the town of Paithan showing the mounds and ruins in background	"
1639	"	View of the excavated site showing the Kot in background	"
1640	"	Another view	"
1641	"	Another view	"
1642	"	Another view with the Madrasāh building in the background	"
1643	"	Another view	"
1644	"	Another view	"
1645	"	General view of the excavation site showing the operations in progress in trench A: first stage	"
1646	"	" : second stage	"
1647	"	" : third stage, showing remains of the old brick drain	"
1648	"	" : showing the detail of the brick drain	"
1649	"	View of the stone wall of the old town	"
1650	"	Panoramic view of the field of operation showing work in three trenches	"
1651	"	Another view	"
1652	"	General view of trench B: first stage	"
1653	"	" : second stage	"
1654	"	" : third stage	"
1655	"	" : fourth stage	"
1656	"	" : fifth stage showing remains of two brick structures	"
1657	"	Another view	"
1658	"	General view of trench C: first stage	"
1659	"	" : second stage	"
1660	"	" : third stage	"

APPENDIX K—*contd.*

Serial No.	Locality	Description	Size
1661	Paithan (Aurangabād District)	General view of trench C : fourth stage ..	8½" × 6½"
1662	"	" : fifth stage, showing remains of old structure	"
1663	"	" : fifth stage, showing remains of old structures	"
1664	"	View of the lower portion of a Saivite sculpture found during excavation	"
1665	"	General view of trench D: first stage	"
1666	"	" : second stage	"
1667	"	" : third stage	"
1668	"	" : fourth stage showing the brick and pottery ring wells	"
1669	"	View of the town of Paithan from Maulana Moizuddin's Dargāh	"
1670	"	General view of Maulana Moizuddin's Dargāh ..	"
1671	"	Interior of Maulana Moizuddin's Dargāh, showing the mosque and adjoining buildings	"
1672	"	Rear view of Maulana Moizuddin's Dargāh ..	"
1673	"	General view of the Dargāh of Ḥazrat Sayyid-us Sa'adāt	"
1674	"	Another view	"
1675	"	View of the Dargāh in the vicinity of Ḥazrat Sayyid-us-Sa'adāt's Dargāh	"
1676	"	View of Eknāth Temple	"
1677	"	General view of Mohalla Islām Mosque ..	"
1678	"	Another view	"
1679	"	View from East of the Madrasāh building, before restoration	"
1680	"	View from North of the Madrasāh, before restoration	"
1681	"	" : after restoration	"
1682	"	" : another view	"
1683	"	View of Tirath Khamb with the temple in background	"
1684	"	View of the Jāmi' Masjid, Paithan	"
1685	"	View of the Kot Mosque	"

APPENDIX K *contd.*

Serial No.	Locality	Description	Size
1686	Paithan (Aurangabād District)	A lump of copper coins of the Āndhra Dynasty found during excavation	8½" × 6½"
1687	"	A copper coin of the Āndhra Dynasty with the Bodhi Tree emblem	"
1688	"	Another coin with the Swastika emblem	"
1689	"	Head of a terracotta female figurine found during excavation	"
1690	"	Head of a terracotta male figurine	"
1691	"	Another head	"
1692	"	Bust of a terracotta figurine	"
1693	"	Another bust	"
1694	"	Terracotta mould with incised human figures	"
1695	Ajanta, Cave VI, (First Floor)	Buddha (painted) right side shrine	"
1696	"	Another plate	"
1697	"	Temptation of the Buddha	"
1698	"	Another plate	"
1699	"	Miracle of Sarasvati	"
1700	"	Detail of the dress of the Buddha near the doorway	"
1701	"	Figure on the door frame side shrine	"
1702	"	Bhikṣu in the antechamber	"
1703	Cave IX	Freize of lions	6½" × 4½"
1704	"	Another plate	"
1705	"	Another plate	"
1706	"	Head of the Buddha, after conservation	"
1707	"	Three episodes from the right wall	"
1708	"	Painted panel of the stupa	"
1709	"	Another panel	"
1710	"	Standing Buddha on pillar	"
1711	Cave XVI	Two subjects, newly cleaned from Cave XVI	"
1712	Cave XXVI	Detail of doorway and window	"
1713	Cave IX, to the left of the door	Scene representing figure with peculiar head-gear and bangles	"

APPENDIX K—*concl'd.*

Serial No.	Locality	Description	Size
1714	Cave IX, to the left of stupa	Buddha preaching	6½" × 4½"
1715	Cave IX, on the pillar to the left of stupa	Buddha painted in red outline	"
1716	Cave X ..	<u>Shadānta Jātaka</u> : two episodes— (1) The fainting queen (2) Bodhisattva standing under the shade of a <i>banian</i> tree	"
1717	Cave X, left wall ..	Rāja surrounded by gods	"
1718	Cave XVI ..	The Elephant Jātaka	"
1719	" ..	Yāksha (murder of a child)	"
1720	" ..	Buddha preaching, to the left of the shrine ..	"
1721	Cave X ..	Buddha on pillar	"
1722	Cave XIX ..	Figure of Buddha, after conservation	"

APPENDIX I.

List of Buddhist paintings in the Lichchavi and Licchavi Temples at Patna, Bihar, and in the Lichchavi Temple at Gaya, Bihar.

Paint No.	Description	Height	Length	Dimensions
1	Head of a female deity (Avalokitesvara) Cave VI (transverse)	4' 6" 1/2	6' 1" 1/2	Head of a female deity (Avalokitesvara)
2	Detail of the belt of the deity (Cave VI) (transverse)	2' 1" 1/2	1' 1" 1/2	Do.
3	Avatara, Cave IX (transverse)	6' 1" 1/2	1' 1" 1/2	Do.
4	Avatara, Cave IX (transverse)	6' 1" 1/2	1' 1" 1/2	Do.
5	Avatara, Mtaka, Cave XVI (transverse)	6' 1" 1/2	1' 1" 1/2	Do.
6	Detail of the head of the deity (Cave XVI)	6' 1" 1/2	1' 1" 1/2	Do.
7	Detail of the head of the deity (Cave XVI) (transverse)	6' 1" 1/2	1' 1" 1/2	Do.
8	Detail of the head of the deity (Cave XVI) (transverse)	6' 1" 1/2	1' 1" 1/2	Do.
9	Elephant procession, Cave XVI (transverse)	6' 1" 1/2	1' 1" 1/2	Do.
10	Temptation of the Buddha, Cave VI (outline)	6' 1" 1/2	1' 1" 1/2	Do.
11	Harta, Mtaka, Cave XVI (outline)	6' 1" 1/2	1' 1" 1/2	Do.
12	The murder of a child, Cave XVI (outline)	6' 1" 1/2	1' 1" 1/2	Do.
13	The Palmapāni, Cave I (outline)	6' 1" 1/2	1' 1" 1/2	Do.
14	Head of Avalokitesvara, Cave I (outline)	4' 1" 1/2	6' 1" 1/2	Do.

APPENDIX M

Note on the working of the Hyderabad Museum for the year 1345 F. (1936-37 A.C.).

By K. M. AHMAD, M.A., LL.B.

During the year under report the Curator was deputed to conduct excavations at Kadkal and Maski and to collect antiquities in the Raichūr District under the guidance of the Director of Archaeology. The tour was a great success. It resulted in the discovery of six prehistoric sites and a valuable collection of antiquities dating from prehistoric times to about the sixth and seventh century A.D. These antiquities have been described in greater detail elsewhere in this Report. After his return from Raichūr District the Curator was deputed to conduct conservation and export work in the Golkonda Fort where some interesting pieces of old chinaware were discovered along with other antiquities of special importance.

Mr. R. M. Joshi, M.A., the Research Scholar attached to the Museum, was on privilege leave for 21 or 22 or 23 days and Mr. R. K. Subbalar, B.A., officiated in his place.

Exhibition and Survey.—The antiquities collected during the course of excavation and survey in the Raichūr District were classified and arranged in the Museum along with those which were discovered during the course of excavations conducted by the Department at Paithan in the Aurangabād District. The exhibition was a marvellous success and it was visited and appreciated by His Excellency the President and the Honourable Members of the Executive Council. It attracted a large number of professors and students from the Colleges and Schools.

Silver Jubilee of H.E.H. the Nizam.—The year 1345 Fakhri is important in the history of Hyderabad for the commemoration of His Exalted Highness the Nizam's Silver Jubilee. An exhibition on a very large scale was arranged in the Public Gardens to demonstrate the progress which the various Departments made during the auspicious reign of His Exalted Highness. The Archaeological Department's arrangement of charts and statements and publications in the first floor of the Town Hall is a display. In addition to that the Director of Archaeology arranged a representative exhibition of Indian Art in the first floor of the Museum Building. An instructive note on the history of painting in India from the earliest times down to the beginning of the modern era was compiled by him and placed at the approach to the exhibition.

The painting hall is completed of actual size copies of Ajanta paintings by Lady Herringham and the Departmental artists, besides one hundred and sixty typical and original paintings, representing Indian Persia, Mughal, Rajast, Kāngra, Gujrat and the Deccan Schools, were displayed in a classified order.

Picture Gallery.—For the purpose of housing caskets and other objects connected with the Silver Jubilee of His Exalted Highness it was graciously commanded by His Exalted Highness that a pavilion should be erected in the Public Gardens. As the proposal for constructing a Picture Gallery in the Public Gardens was pending for a long time the Government were persuaded to amalgamate the Casket Pavilion and the Picture Gallery into one beautiful edifice. It will be interesting to note that the work of construction has been taken in hand and is progressing at a very good speed.

Musicalia.—During the year under report 2,494 coins were added to the Cabinet of the Museum. Of these 52 are of gold, 571 of silver, 1,838 of copper and 33 of alloy. The most important acquisitions for the Cabinet were the coins discovered at Paithan, Kadkal and Maski. A note on these coins appears as Appendix O.

Manuscripts.—During the year under report four manuscripts (Nos. 8831, 8832, 8988 and 8989) were purchased, of which No. 8831 is very important. It has been inscribed in Nasq style of a very high order and contains a translation of the text between the lines by Kāghafi.

Arms and weapons.—About forty pieces of arms and weapons representing different types of swords, Katārs, etc., were added to the collection in the Museum. One Sangin presented by Nawab Dost Muhammad Khan of Hyderabad bears the word حيدر (Hyder). It is most probable that this piece comes from the armoury of Hyder Ali of Mysore. Special mention may be made of the

APPENDIX N

List of Exhibits acquired for the Hyderabad Museum during the year 1346 F. (1936-37 A.C.)

Serial No.	Description	How acquired
1	<i>Qur'ān Sharīf</i> (MS. with Persian translation by Kāshifi) ..	Purchased
2	Kalām-i-Majīd (Manuscript)	Do.
3	Sangīn	Presented by Nawab Dost Muhammad Khan Bahadur
4	Brass Āftābā	Purchased
5	Brass Katora (inscribed)	Do.
6	Enamelled box	Do.
7	Āftābā	Do.
8	Sailabchī	Do.
9-10	Bidri flowerpots	Do.
11-12	Brass Āftābās	Do.
13	Brass Āftābā spouted	Do.
14	Deghcha	Do.
15	Āftābgīrī sword with gold work on handle	Do.
16	Dagger with gold work on handle	Do.
17	Chhura with ivory handle	Do.
18	Ballam: A steel spear	Do.
19	Wooden frame of a looking-glass with miniatures in Persian style	Do.
20	Copper Deghchī (inscribed)	Do.
21-44	Sculptures: Images representing self-sacrifice (Viragals) ..	Transferred from Nalgonda
45	Sīva Bhikshatan Mūrtī	Transferred from Pāngal
46	Image of a warrior cutting his own throat	Transferred from Nalgonda
47	Saptamatrīka piece'	Transferred from Pāngal
48	Nāga, seven hooded	Do.
49	Kumara on peacock	Do.
50	Fragmentary panel of Vishnu	Do.
51	Sīva and Pārvatī, fragmentary	Do.
52	Nāgīnī	Do.
53	Goddess Dwarpalika	Do.
54-55	Inscriptional tablet pieces	Do.

APPENDIX N—*contd.*

Serial No.	Description	How acquired
56	Architectural piece with elephants. . . .	Transferred from Pāngal
57	Nāga	Do.
58-60	Nāginis	Do.
61	Fragmentary Bhikṣhātān Mūrti	Do.
62	Sword with gold work on handle	Purchased
63	Sword with Munbatkāri gold work on handle	Do
64	Sword with gold work on handle	Do.
65	Ajanta : outline of a fresco, Cave X . .	
66	" " " " " "	
67	" " " " " "	
68	Crystal bowl	Purchased
69	Qarabān	Do.
70	Paintings on mica: Brahmin with book in hand, portions defaced	Presented by S. N. Reddy, Esq., Personal Asstt. to Director General of Police
71	" " Lady carding wool	Do.
72	" " Gentleman in green Angarakha . .	Do.
73	" " Lady in dancing posture blowing an instrument of music . .	Do.
74	" " Potter and his wife working . .	Do.
75	" " Rural dance	Do.
76	" " Muslim Sardār with sword . .	Do.
77	" " Lady with flower in hand . .	Do.
78	" " Hunter with birds in hand . .	Do.
79	" " Female hunter with peacock on head . .	Do.
80	" " Plough driven by two bullocks . .	Do.
81	" " Carriage driven by two bullocks . .	Do.
82	" " Male with red conical cap and baggage	Do.
83	" " Female with bowl and baggage . .	Do.
84	" " Female with bowl in hand . .	Do.
85	" " Religious person with flag in hand . .	Do.
86	" " Gentleman with flower in hand . .	Do.

APPENDIX N—*contd.*

Serial No.	Description	How acquired
87	Paintings on mica : Lady with Māla in hand	Presented by S. N. Reddy, Esq., Personal Asstt. to Director General of Police
88	„ „ Female with baggage in hand ..	Do.
89	„ „ Male with baggage at back ..	Do.
90	„ „ Woman in green Sārī	Do.
91	„ „ Man in white dress	Do.
92	„ „ Man with rope in hand	Do.
93	„ „ Woman with pots on head ..	Do.
94	Terracotta disc	Found at Maski
95-100	Jazayil (old match lock)	Presented by the Officer Commanding 'B' Battery, N.F.A.
101	Ghornal	Do.
102	Armour with breast plates	Do.
103	„ „ „ „	Do.
104-106	Clay models representing the Progress of H.E.H. the Nizam's Postal Department	Presented by H.E.H. the Nizam's Postal Department
107-108	Chhūras with gold work on handle	Purchased
109	Jambia	Do.
110	Sailapa sword with gold work on handle	Do.
111	Khanda	Do.
112	Enamelled candle stand	Do.
113	Persian Samādār	Do.
114	Persian Sailābchī	Do.
115-117	Engraved Persian Deghchīs	Do.
118	Chhūra with jade handle	Do.
119-120	Two Bows	Presented by the Officer Commanding 'B' Battery, N.F.A.
121	Arrows	Do.
122-123	Earthen pipe from Golconda	Do.
124	Nut-cracker representing a couple	Purchased
125	Deghchī	Do.

APPENDIX N- *contd.*

Serial No.	Description	How acquired
126	Steel bow	Purchased
127	Straight knife	Do.
128	Steel box	Do.
129-130	Sword with gold work on handle	Do.
131	Bidri Pāndān	Do.
132	Khanda with gold work on handle	Do.
133	'Abbāsī sword with gold work on handle	Do.
134	Old gun	Do.
135	Humāyāl Sharif (MS.)	Do.
136	Palm leaf book in Tamil	Do.
137-141	Albums of paintings depicting scenes from the Rāmāyan	Do.
142	Katār with Shikārgāh work in gold on handle	Do.
143	Katār with silver embossed lettering on handle	Do.
144	Katār	Do.
145	Chhūra	Do.
146	Shanāi Huqqa with brass inlay work	Do.
147	Bronze head of a male Lambādi from H.E.H. the Nizam's State	Do.
148	Bronze head of a female Lambādi from H.E.H. the Nizam's State	Do.
149	Bronze head of a male Chinghu from H.E.H. the Nizam's State	Do.
150	Bronze head of a female Chinghu from H.E.H. the Nizam's State	Do.
151	Textile piece: Yūsuf and Zulekhā	Do.
152-165	Dastawizāt (MSS.)	Do.
166	Old Arab Gun	Do.
167	Katār	Do.
168	A Murraqa containing Qit'ās and paintings	Do.
169	Ghori: Crackle ware	Do.
170	Bidri Lota	Do.
171-173	Bidri legs of a cot	Do.
174	Bidri Šurāhī	Do.



APPENDIX N—*concl'd.*

Serial No.	Description	How acquired
205	¹ Part of the Palace, Madura	Purchased
206	¹ Ternal Naik's Choultry, Madura	Do.
207	¹ North-east view of the Cotsea Bhaug on the River Jumna, Delhi	Do.
208	¹ Mausoleum of Nawāb Assooph Khan, Rajemahel .. .	Do.
209	¹ Gate of the Mosque built by Hāfiz Ramut, Pillibhat .. .	Do.
210	¹ Mausoleum of Kausim Solemanee at Chunar Gur .. .	Do.
211	² The entrance to the Mausoleum in Sulṭān Khusrō's Garden, near Allāhabad	Do.
212	² View at Delhi near the Mausoleum of Humaioon .. .	Do.
213	² A Baolee near the old city of Delhi	Do.
214	³ Sculptured rocks at Mavalipuram on the coast of Coromandel	Do.
215	³ Interior of an excavated Hindoo temple on the island of Salsette	Do.
216	⁴ Mosque at Lucknow	Do.
217	⁵ Pagoda at Tanjore	Do.

¹ Drawn by Thomas Daniell and engraved by Thomas and William Daniell.² Drawn and engraved by Thomas and William Daniell.³ Drawn and engraved by Thomas, R. A. and William Daniell.⁴ Drawn by Henry Salt and engraved by L. Hill.⁵ Drawn by Henry Salt and engraved by L. Bluck.

fit in the old coins. These facts tempted us to dig some trial trenches which disclosed furnaces, slag and ash-chutes. On sifting the earth and particularly the ash we found about 150 copper coins in different stages of manufacture. A majority of the coins was found in chutes along with the moulds. (See Plate XIVa-b)

The coins may be divided into two classes:—

1. Those with a Garuda on the obverse with folded arms in a flying posture.
2. Those with a bull on the reverse facing left and with a crescent above it.

The above-mentioned coins have a Nāgarī legend on the reverse but as the die with which the coins were struck was much bigger than the size of the coins, on none of them we find a complete legend.

Besides the above-mentioned two varieties a few copper ferrules and some flat circular pieces of copper have also been discovered. The latter may be unfinished coins.

The most important acquisitions for the cabinet were the coins discovered at Paithan, Kadkal and Maski. During the course of excavations at Paithan four punch-marked coins and about twenty-five Āndhra coins were discovered. The Āndhra coins are of exciting interest as they have the Bodhi Tree and Swastika represented upon them which resemble similar emblems upon the Taxila coins given by Major General S. A. Cunningham on Plate II of his book—*Coins of Ancient India*—and figured as 78, 15 and 16.

The coins discovered at Kadkal represent unpublished varieties, but as the legends upon them are incomplete it is difficult to give any precise date to the coins. Nevertheless, the Nāgarī script and the flying Garūda indicate that the coins belong to a period somewhere between the eleventh and fourteenth centuries A.D.

The gold coins found at Maski are also of equal interest. One of them, a tiny piece, bears an elephant on one side and a lion on the other. The other two bear a lion on one side resembling to a great extent that on the Kadamba coins in the matter of technique. All these three gold coins are of an unpublished type and no date could yet be definitely assigned to them.

APPENDIX P—*contd.*

Serial No.	Metal	Number of coins	Description	How acquired	REMARKS
15	Æ	12	Mughal ..	} Munsif, Mahbubnagar. T.T.*	Letter No. 736, dated 17th Isfandār, 1346 F.
	Æ	1	'Adil Shāhi ..		
16	Æ	2	Baihmani ..	} Discovered at Bidar. T.T.*	....
	Æ	1	Vijayanagar ..		
17	Alloy	1	Turk (Balban) ..	} Presented by the Bombay Branch of Royal Asiatic Society	....
	Alloy	7	Khalji ..		
	Alloy	6	Tughluq ..		
18	Æ	1	Mughal ..	District Magistrate, Bir. T.T.*	Letter No. 2249, dated 4th Urdibihisht, 1346 F.
19	Æ	6	Gujrat ..	Presented by the Bombay Branch of Royal Asiatic Society	....
20	Æ	5	Mughal ..	Tahsildar, Ahmadpur, Bir. T.T.*	Letter No. 1281, dated 17r, 1346 F.
21	Æ	1	Shilling ..	} Mint Master, H.E.H. the Nizam's Mint, Hyderabad. T.T.*	Letter No. 1837-38, dated 15th Amurdād, 1346 F.
	Æ	1	East India Co. $\frac{1}{4}$ Re.		
	Æ	1	Hongkong $\frac{1}{4}$ Re. . .		
	Æ	1	Hindu $\frac{1}{4}$ Re. ..		
	Æ	1	2 anna piece East India Co.		
22	Æ	13	Mughal ..	Do. ..	Letter No. 1881-82, dated 22nd Amurdād, 1346 F.
23	Æ	28	Mughal ..	Do. ..	Letter No. 1883-84, dated 24th Amurdād, 1346 F.
24	Æ	322	Mughal ..	First Taluqdar, Gulbarga. T.T.*	Letter No. 5438, dated 9th Shahriwar, 1346 F.
25	Æ	86	Baihmani ..	Purchased ..	18th Shahriwar, 1346 F.
26	Æ	50	Baihmani ..	„ ..	21st Shahriwar, 1346 F.
27	Æ	1	Mughal ..	First Taluqdar, Adilabad. T.T.*	Letter No. 2760, dated 28th Shahriwar, 1346 F.
28	Æ	22	Miscellaneous ..	Purchased ..	27th Shahriwar, 1346 F.
29	Æ	69	„ ..	„ ..	....

* T.T.=Treasure Trove.

APPENDIX P—*contd.*

Serial No.	Metal	Number of coins	Description	How acquired	REMARKS
30	Æ	26	East India Co. ..	First Taluqdar, Raichūr. T.T.*	Letter No. 5144, dated 6th Mihr, 1346 F.
31	Æ	1	?	Mint Master, H.E.H. the Nizam's Mint, Hyderabad. T.T.*	Letter No. 2260-61-62, dated 9th Mihr, 1346 F.
32	Æ	14	Miscellaneous ..	Purchased ..	9th Mihr, 1346 F.
33	Æ	7	Āsaf Jāhī ..	} Mint Master, H.E.H. the Nizam's Mint, Hyderabad. T.T.*	Letter No. 2293-94-95, dated 10th Mihr, 1346 F.
	Æ	2	Turkish ..		
34	Æ	1	Mughal ..	Presented by the Bombay Branch of Royal Asiatic Society	....
35	Æ	14	Miscellaneous ..	Purchased ..	1st Ābān, 1346 F.
36	Æ	39	" ..	" ..	13th Ābān, 1346 F.
37	Æ	40	" ..	" ..	15th Ābān, 1346 F.
38	Æ	168	" ..	" ..	20th Ābān, 1346 F.
39	Æ	384	" ..	" ..	22nd Ābān, 1346 F.
40	Æ	288	" ..	" ..	26th Ābān, 1346 F.
41	Æ	200	" ..	" ..	....
	Æ	3	?	} Discovered at Maski, Raichūr District. T.T.*	....
	Æ	1	Mughal ..		
42	Æ	8	Āsaf Jāhī ..		
	Æ	1	East India Co. ..		
	Æ	1	$\frac{1}{4}$ Re. East India Co.		
	Æ	1	Muslim		
43	Æ	150	Hindu ..	Discovered during Excavations at Kadkal, Raichūr District. T.T.*	....
	Alloy	1	Āndhra ..	} Discovered during Excavations at Paithan, Aurangabad District. T.T.*	....
	Æ	46	Āndhra ..		
	Æ	2	Āsaf Jāhī ..		
	Æ	5	Baihmanī ..		

* T.T. = Treasure Trove.

APPENDIX P—*concl'd.*

Serial No.	Metal	Number of coins	Description	How acquired	REMARKS
44†	Æ	1	Maratha ..	Discovered during Excavations at Paithan, Aurangabad District. T.T.*
	Æ	4	Mughal ..		
	Æ	3	Mughal ..		
	Æ	4	Punch marked ..		
	Æ	1	Qutb Shāhi ..		
	Æ	1	Qutb Shāhi ..		
	Æ	3	Tughluq ..		

* T.T. = Treasure Trove.

† In addition to these coins a lump of copper Āndhra coins about ten in number was also discovered at Paithan.

Gold	..	..	52
Silver	..	..	571
Copper	..	..	1,838
Alloy	..	..	33
TOTAL			2,494

APPENDIX Q

*List of Books acquired for the Library of the Hyderabad Museum during the year
1346 F. (1936-37 A.C.)*

Serial No.	Title	REMARKS
ARCHAEOLOGICAL SURVEY		
1	<i>Annual Report of the Archaeological Department of His Exalted Highness the Nizam's Dominions for the year 1343 F.</i>	Presented by H.E.H. the Nizam's Government
2	<i>Annual Report of the Archaeological Researches in Mysore for 1933</i>	Presented by the Director, Archaeological Researches in Mysore
3	<i>Field Archaeology: Some notes for beginners issued by the Ordnance Survey, London</i>	Purchased
ART, ARCHITECTURE, ETC.		
4	<i>Ashton, L., and Gray, B.; Chinese Art</i>	Do.
5	—, —; Japanese Seven Paintings	Do.
6	—, —; Interior Decoration	Do.
7	<i>Hobson, R. L.; A Guide to Islamic Pottery of Near East</i> ..	Do.
8	—, —; Handbook of Pottery and Porcelain of the Far East	Do.
9	—, —; A Guide to English Pottery and Porcelain ..	Do.
10	<i>Islamic Pottery of the Near East (15 Pictorial Post Cards, British Museum)</i>	Do.
11	<i>Turkish Pottery (6 Pictorial Post Cards, British Museum)</i> ..	Do.
DICTIONARIES, ENCYCLOPÆDIA, ETC.		
12	<i>Hugo; French English and English French Dictionary</i> ..	Do.
13	—, —; Encyclopædia of Popular Science	Do.
14	<i>Brown, Kite Jr., and Lewis, William A.; Secretary's Desk Book</i>	Do.
EPIGRAPHY		
15	<i>Diksalkar, D. B.; Selections from Sanskrit Inscriptions</i> ..	Do.
HISTORY, GEOGRAPHY AND TRAVELS, ETC.		
16	<i>Baden Powell; Origin and Growth of village</i>	Do.
17	<i>Casi Raja Pandit; An account of the last battle of Panipat</i> ..	Do.
18	<i>Childe, V. Gordon; New Light on the most Ancient East</i> ..	Do.
19-20	<i>Durant, Will; Story of Civilization, Vols. I and II</i> ..	Do.

APPENDIX Q *contd.*

Serial No.	Title	REMARKS
22	<i>Hazrat Amir Khusrau, The Campaigns of Alaeddin Khalji</i> (Translated with note by Muhammad Habib and historical introduction by S. K. Krishnaswamy Aiyangar)	Purchased
23	<i>Letter to Owen; Mongols of Manchuria</i> ..	Do.
24	<i>Macleay, Neil; Attack on Everest</i> ..	Do.
25	<i>Majumdar, J. M.; Asoka</i> ..	Do.
26	<i>Pandit, K. M.; Malabar and the Portuguese</i> ..	Do.
27	<i>Malabar and the Dutch</i> ..	Do.
28	<i>Rice, Stanley; Hindu Customs and their origin</i> ..	Do.
29	<i>Schultz, Blanche Anna L.; Ancient Karnatak</i> ..	Do.
30	<i>Taj al-Latif; Tarikh Sana Muzafari</i> ..	Do.
31	<i>Wells, H. G.; The Outlines of History</i> ..	Do.
32	<i>Wahid Hussain; Story of Muhammad Gawan</i> ..	Do.
33	<i>Guide to London</i> ..	Do.
MUSEUMS		
33	<i>Marham, S. F., and Hargreaves, H.; The Museums of India</i>	Presented by the Empire Museums Association, London
NUMISMATICS		
34	<i>Comencini, M.; Coins of the Modern World (1870-1936)</i> ..	Purchased
35	<i>Hollenberg, J.; Collectio Nummorum Cuficorum</i> ..	Do.
36	<i>Singhal, C. R.; Catalogue of the coins in the Prince of Wales Museum of Western India: the Sultans of Gujarat</i>	Presented by the Prince of Wales Museum of Western India, Bombay
37	—, —; Muslim Coins of St. Petersburg ..	Purchased
SCIENCE		
38	<i>Haddon, Alfred C.; History of Anthropology</i> ..	Do.
39-40	<i>Tylor, E. B.; Anthropology, Vols. I and II</i> ..	Do.
41	<i>Watson, E. L. Grant; Enigmas of Natural History</i> ..	Do.
JOURNALS, PERIODICALS AND REPORTS, ETC.		
42	<i>Memoirs of the Indian Museum, Vol. XI, No. 4</i> ..	Presented by the Director, Zoological Survey of India, Calcutta

APPENDIX Q—concl'd.

Serial No.	Title	REMARKS
43-44	<i>Records of the Indian Museum</i> , Vol. XXXVIII, parts 2, 3 and 4	Presented by the Director, Zoological Survey of India, Calcutta
45	<i>Annual Report of the Prince of Wales Museum of Western India</i> for the year 1935-36	Presented by the Curator
46	<i>Annual Report of the Victoria and Albert Museum</i> for the year 1935-36	Do.
47	Résumé of the activities of the Dacca Museum from 1926-27 to 1934-35	Do.
48	<i>Annual Report on the Central Museum, Nagpur</i> , for the years 1934-35, 1935-36, 1936-37	Presented by the Curator, Central Museum, Nagpur
49-52	<i>Islamic Culture</i> , Vol. XI, parts 1 to 4	Purchased
53-55	<i>Brahma Vidya</i> ; The Adyar Library Bulletin, Vol. I, parts 1 to 4	Presented by the Director of the Adyar Library, Madras
56	<i>Journal of the Department of Letters, Calcutta University</i> , Vol. XIX	Presented by the Calcutta University

APPENDIX R

Statement of Expenditure on the Hyderabad Museum during the year 1947-48 (1946-47 A.C.)

				Rs. A. P.	Rs. A. P.
Salaries —					
Curator (100-20-500)	..	..	..	5,040	0 0
Establishment	..	..	..	6,844	0 0
				—————	11,884 0 0
Contingencies —					
Fixed contingencies	..	..	..	1,083	0 11
Extra contingencies	{ Livery of ponies		..	358	14 11
	{ Purchase of books		..	209	2 0
	{ Furniture		..	244	2 0
	{ Electricity		..	107	13 0
	{ Water tax		..	27	0 0
				—————	2,027 10 10
Purchase of exhibits	..	..	..	3,469	12 2
Removal of sculptures	..	..	..	169	4 0
Preservation of exhibits	..	..	..	504	10 8
				—————	4,142 10 10
GRAND TOTAL				.....	O.S. 18,045 5 8
					(B.G. 15,467 7 2)

ILLUSTRATIONS



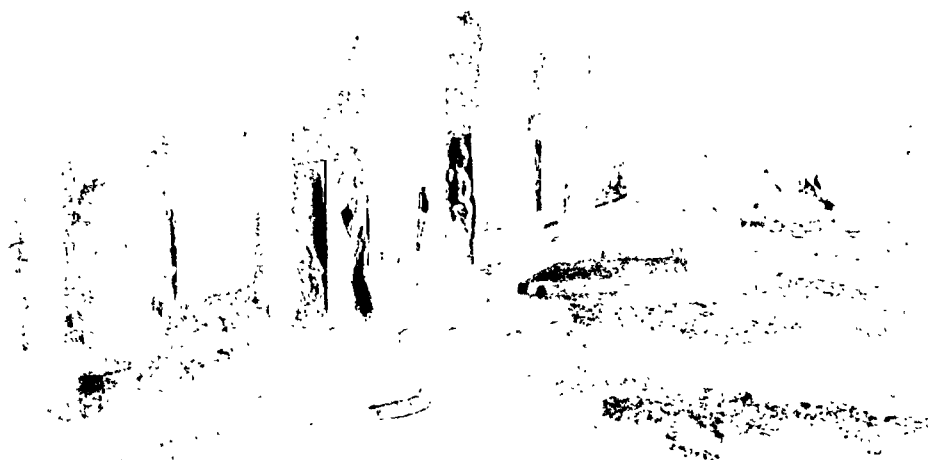
(a) Bhokardan Cave : before conservation

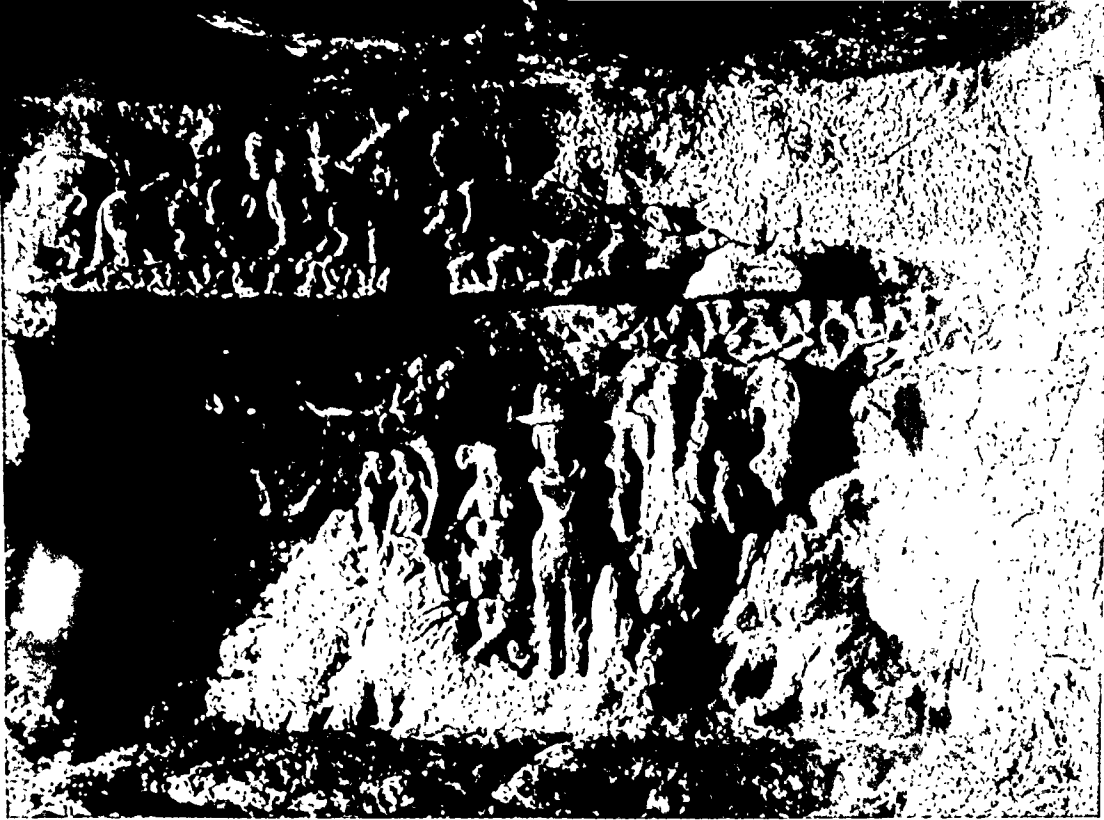


(b) The same : after conservation



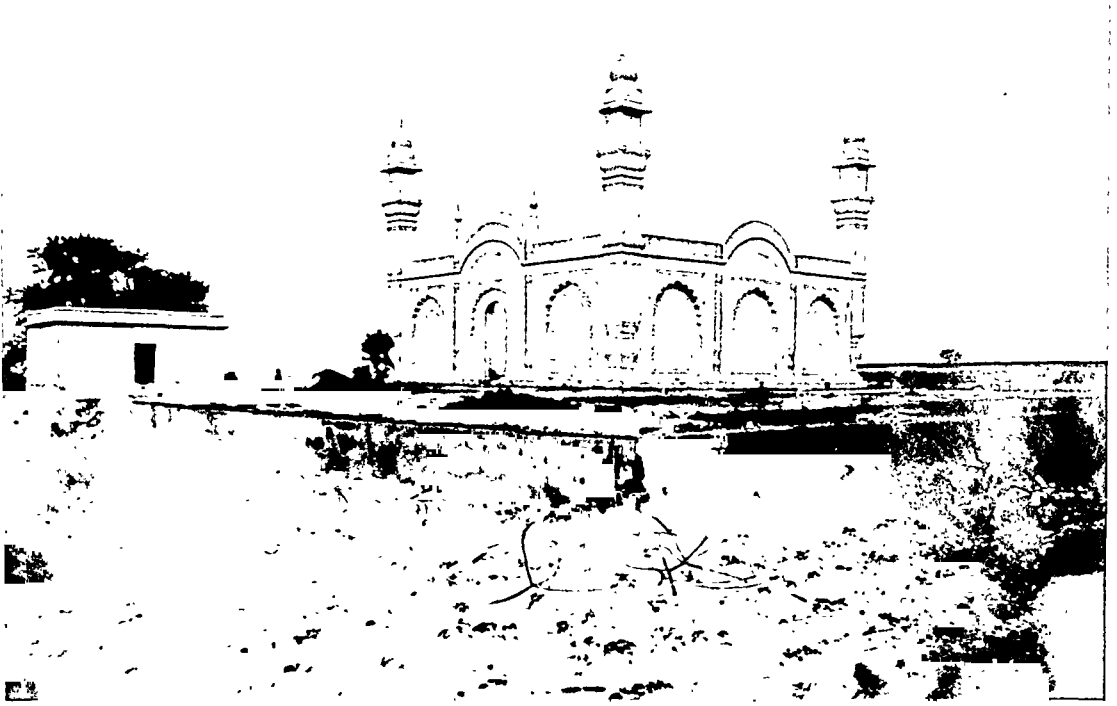
(a) Bhokardan Cave : interior before conservation





(a) Bhokardan Cave ; sculpture of Siva and Pārvatī

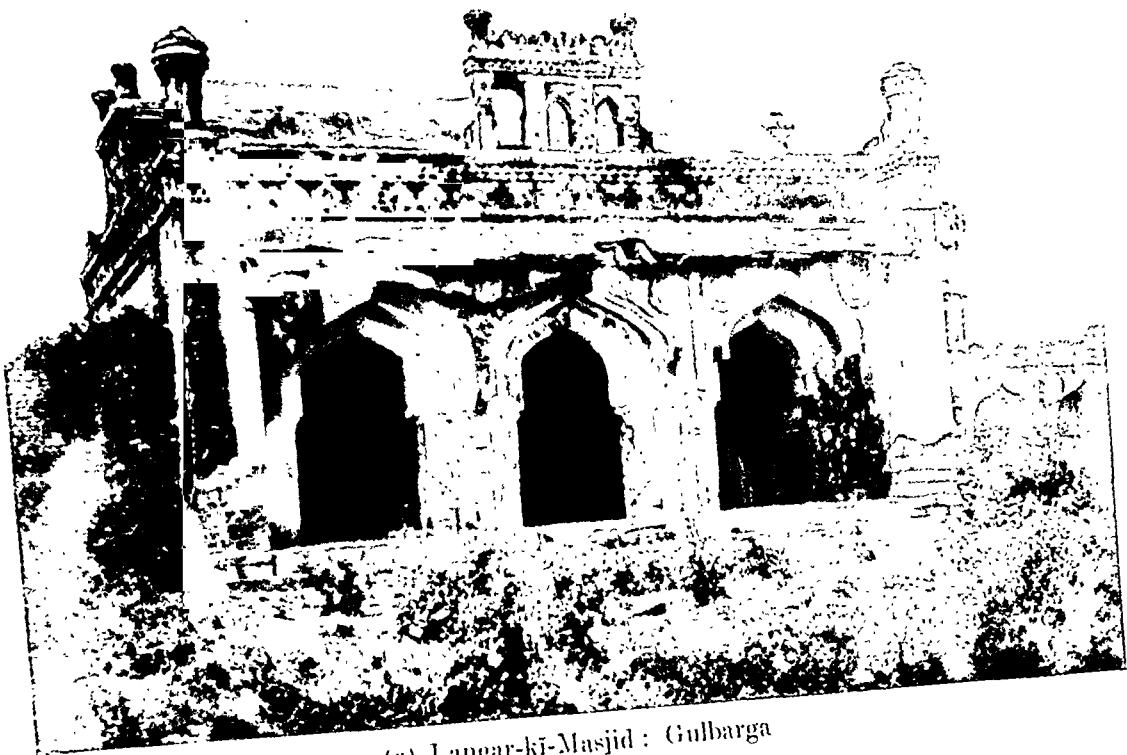




(a) Monument of Ḥazrat Āṣaf Jāh I : Burhānpūr.



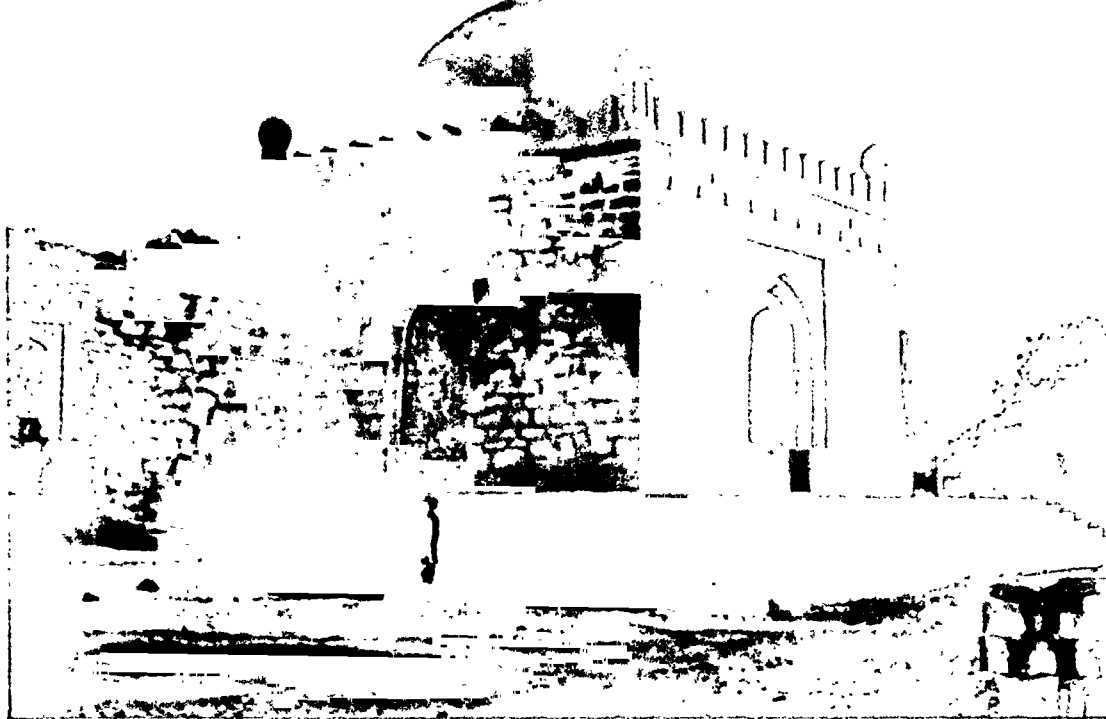
(b) The same : cenotaph



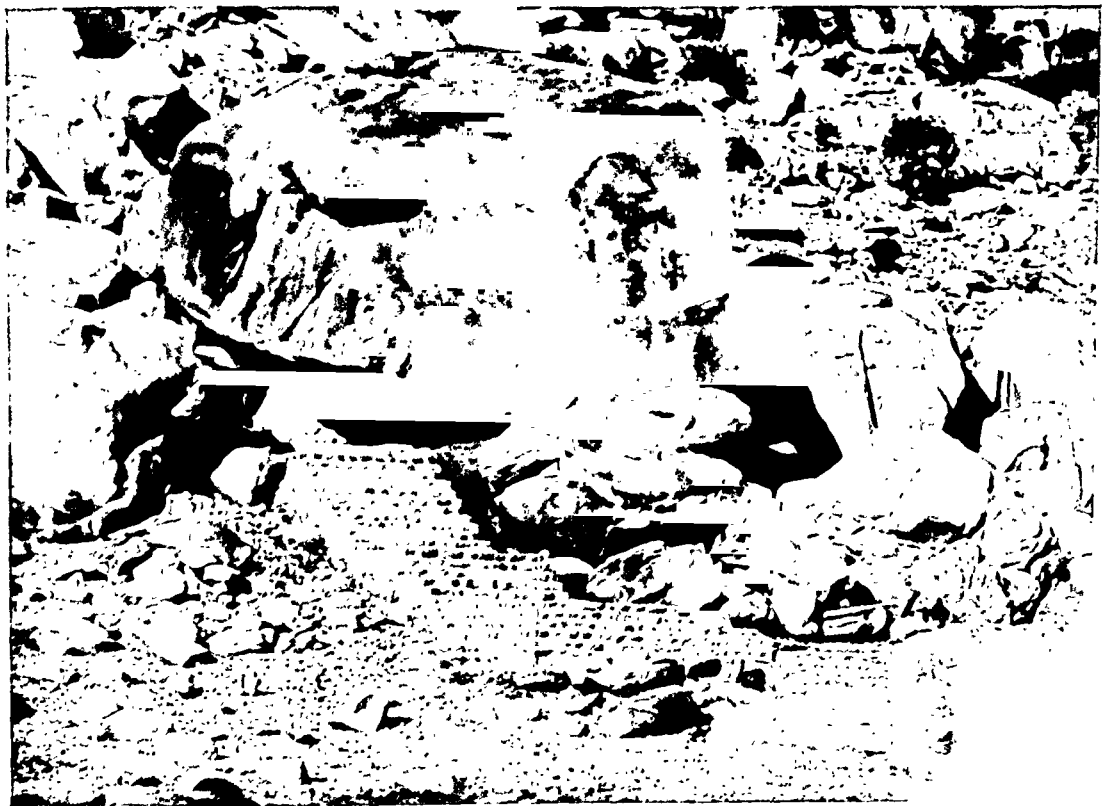
(a) Langar-kī-Masjid : Gulbarga



(b) The same



(a) Shahi Bazar Mosque entrance, after conservation : Gulbarga



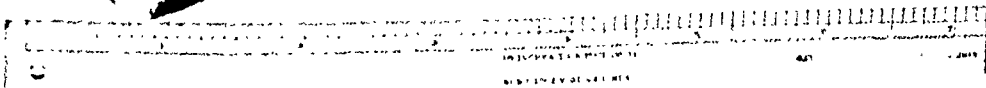
(b) Asokan Edict Rock : Maski, after clearance and construction of steps



(a) The same : terracotta discs

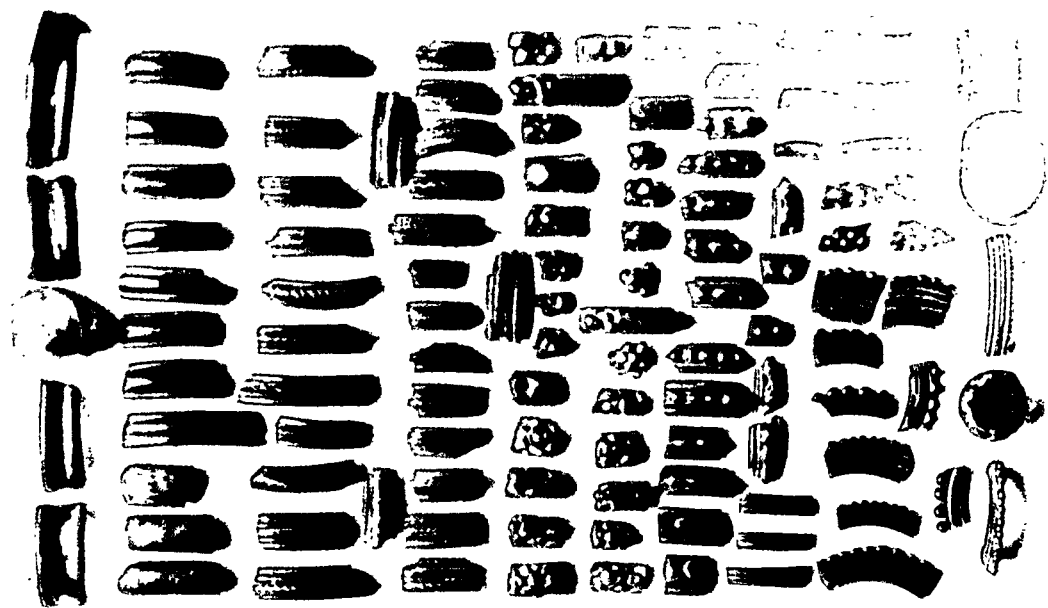


(a) Maski Excavations : terracotta figurines

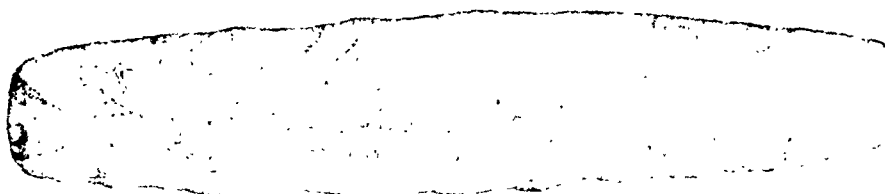
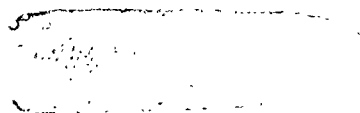
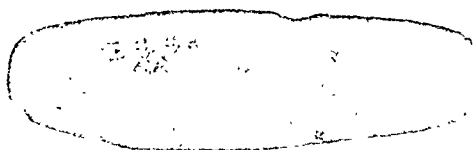
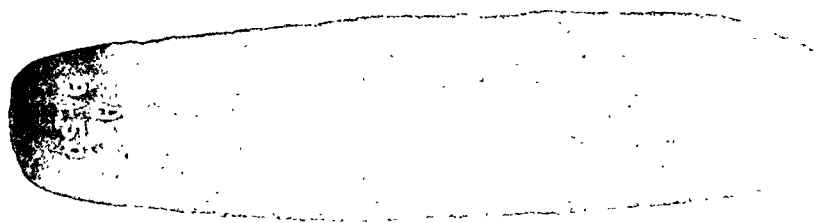
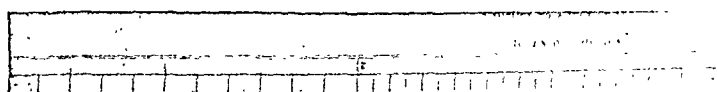
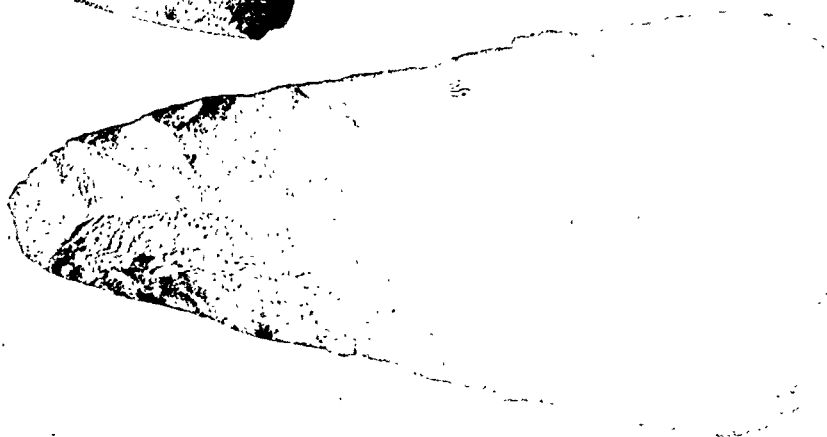


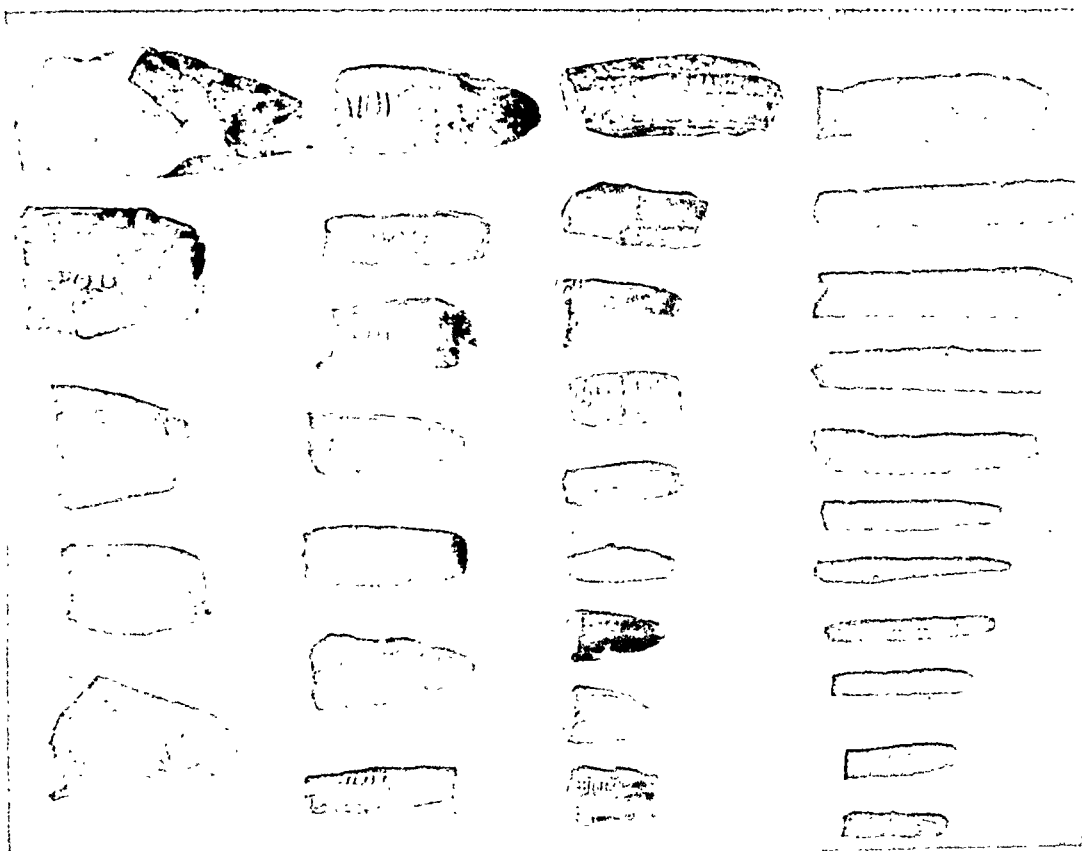


(b) The same: shell baugles

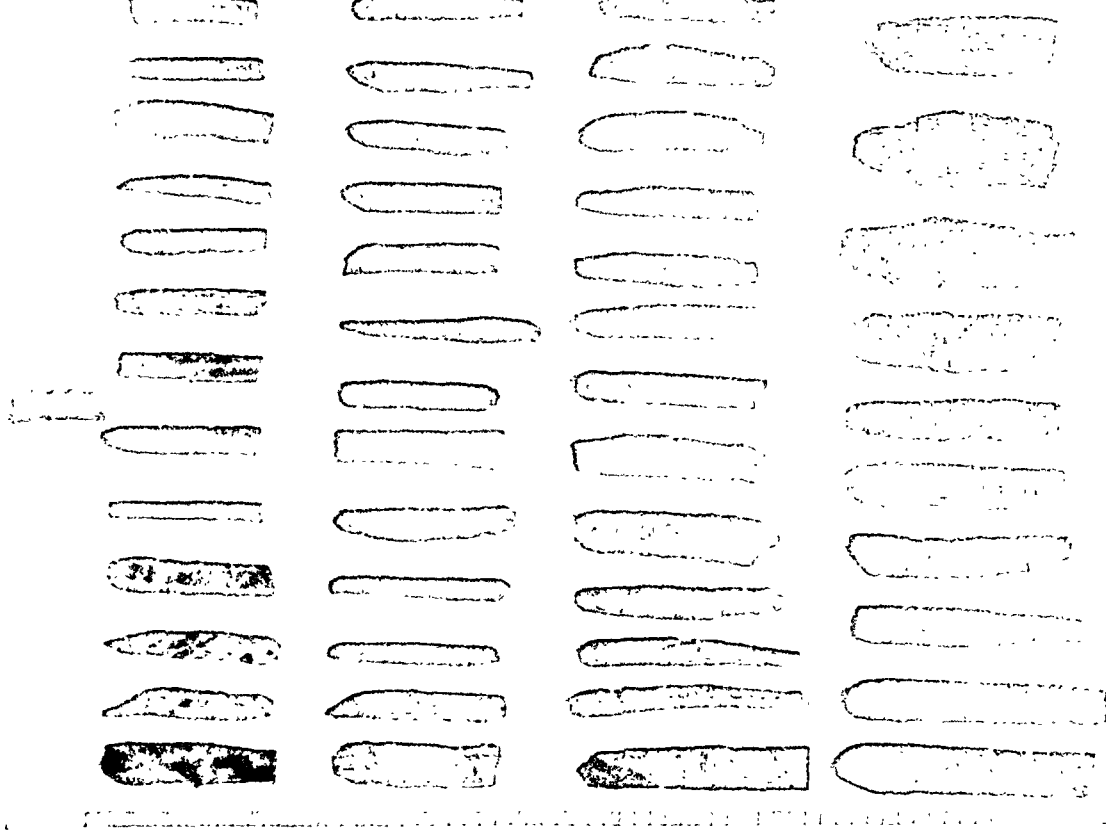


(c) More: same: shell baugles

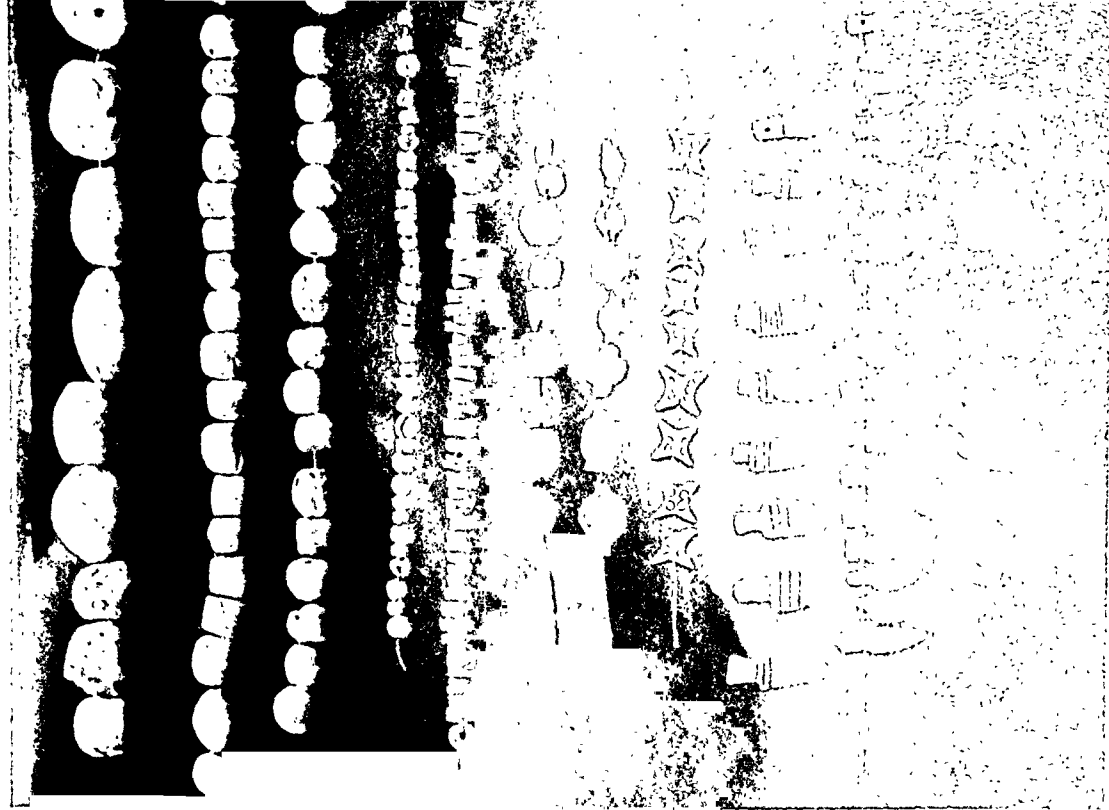




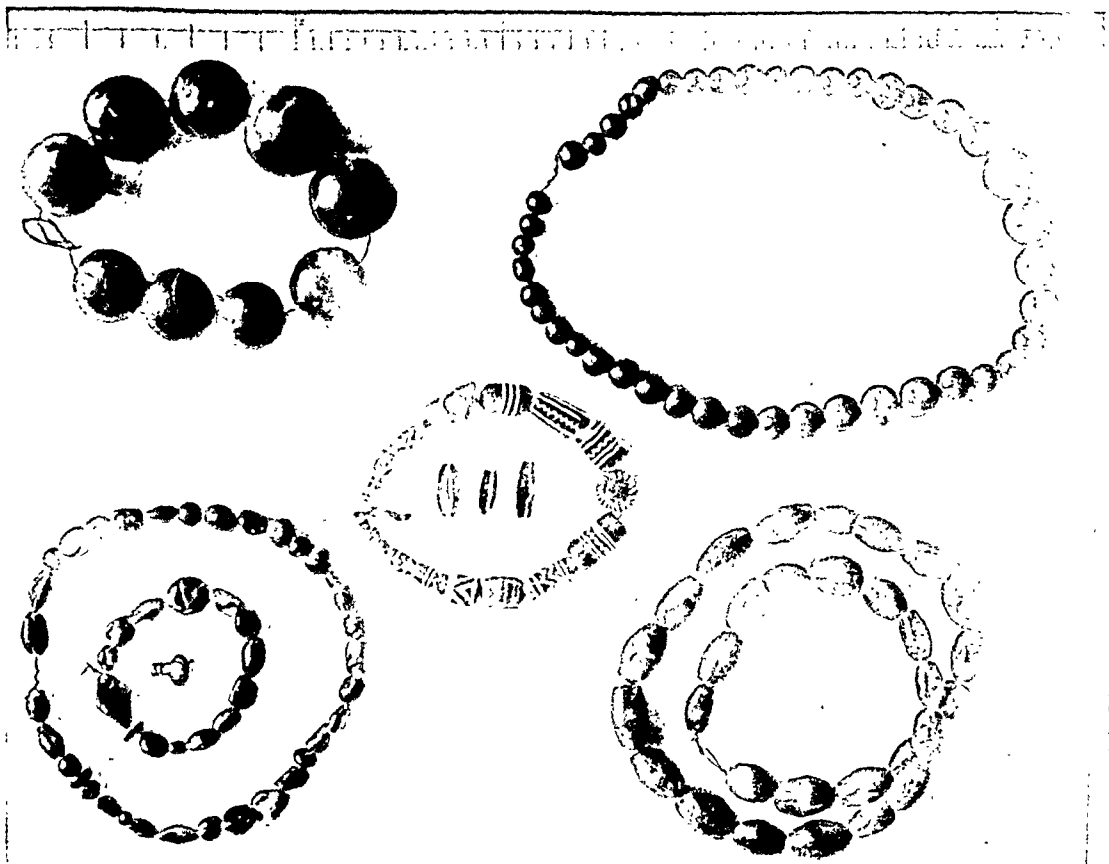
(a) Maski Excavations : flakes and cores



(b) The same : another set

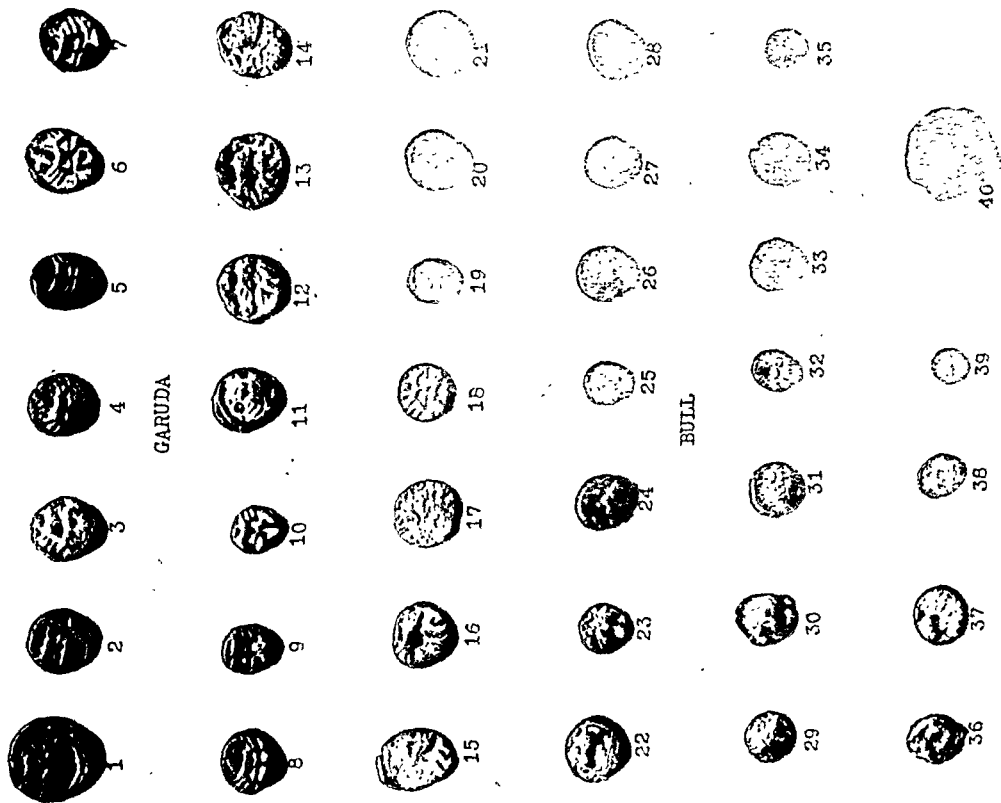


(b) The same : beads of clay and shell and other ornaments



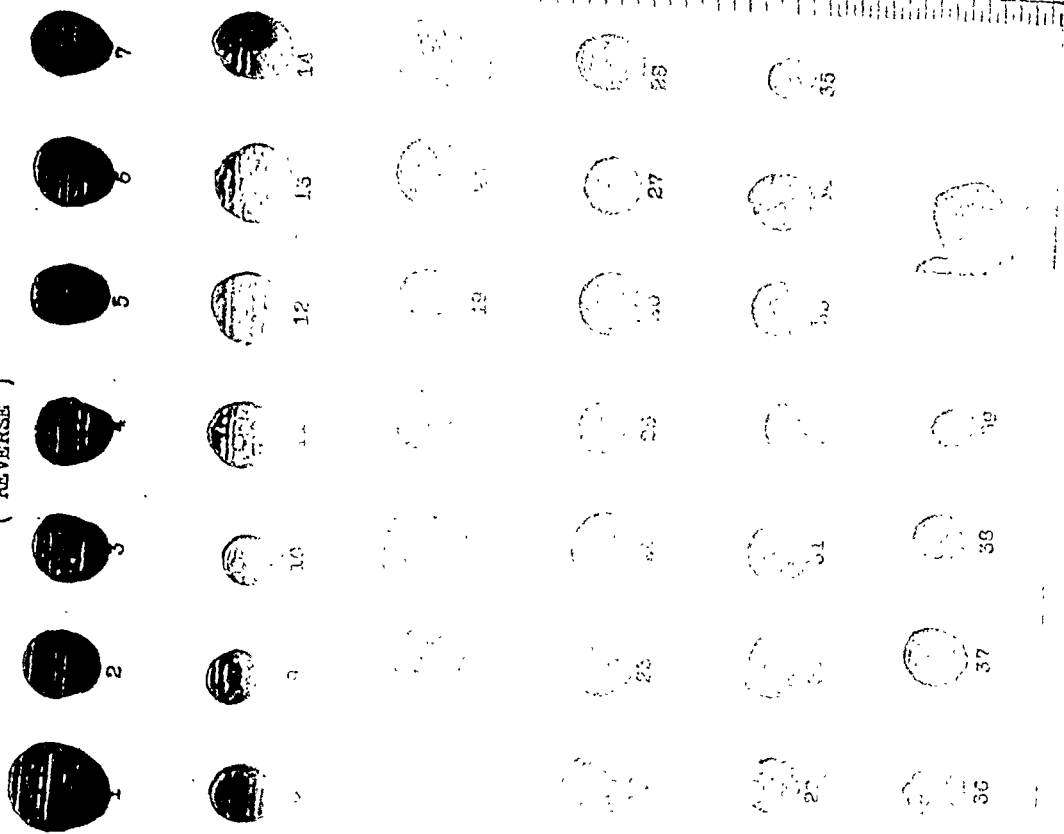
(a) Maski Excavations : beads of semi-precious stones

(O B V E R S E)

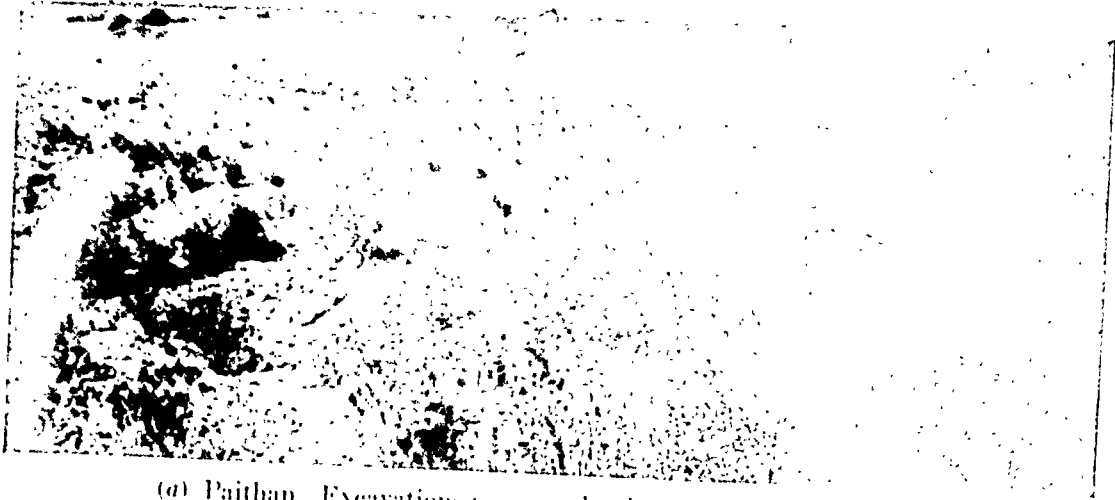


(a) Kadkal Excavations : copper coins found near an old mint :
obverse

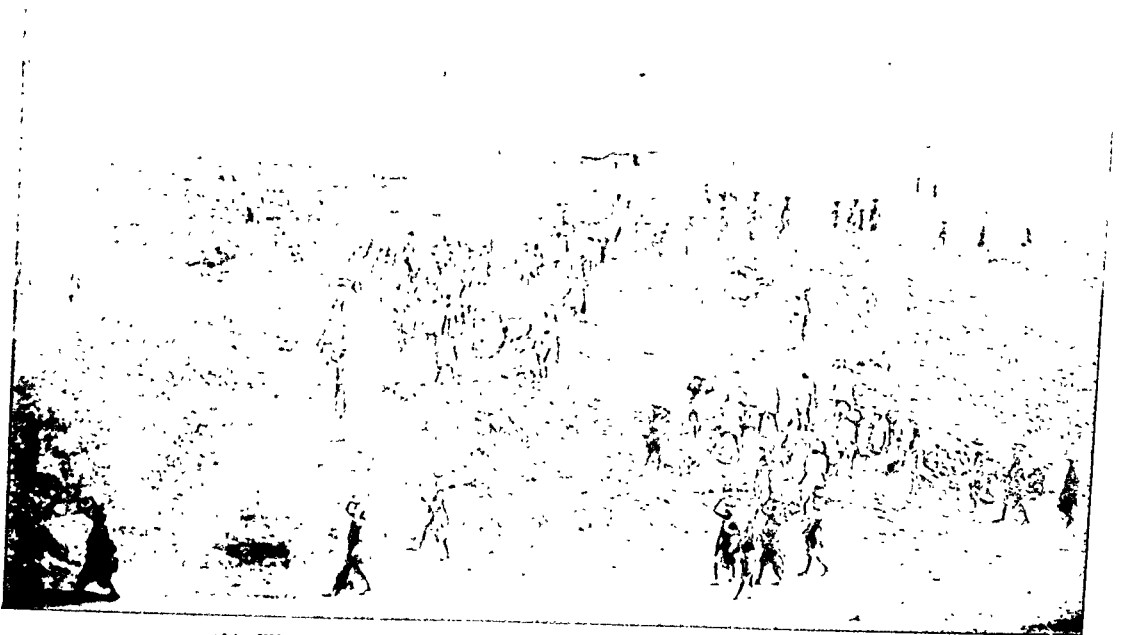
(R E V E R S E)



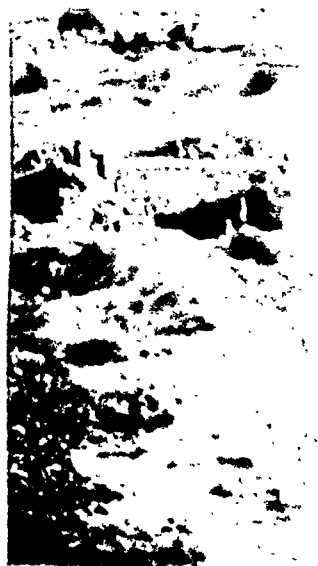
(b) The same : reverse



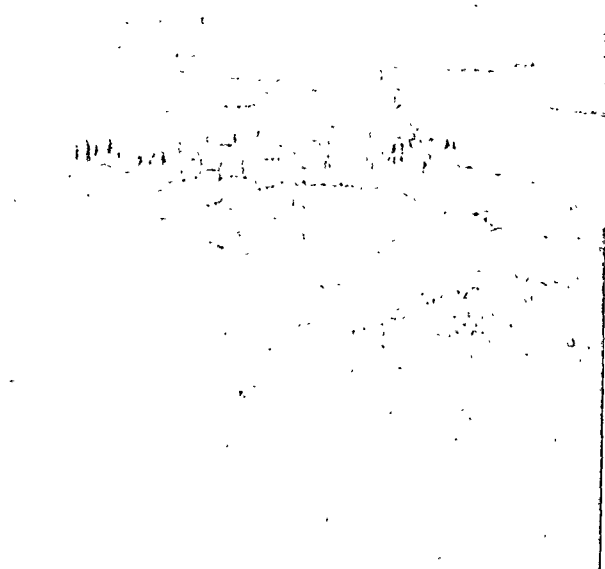
(a) Paithan Excavations : general view of the site, before excavation



(b) The same : panoramic view of the excavation, first stage



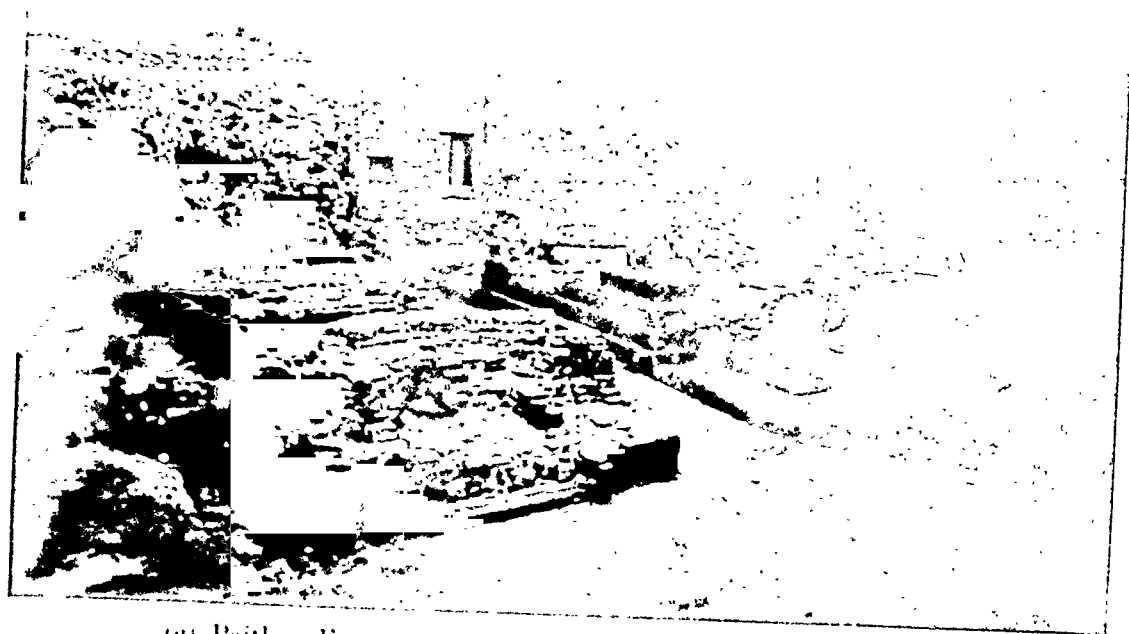
(a) Pathan 1



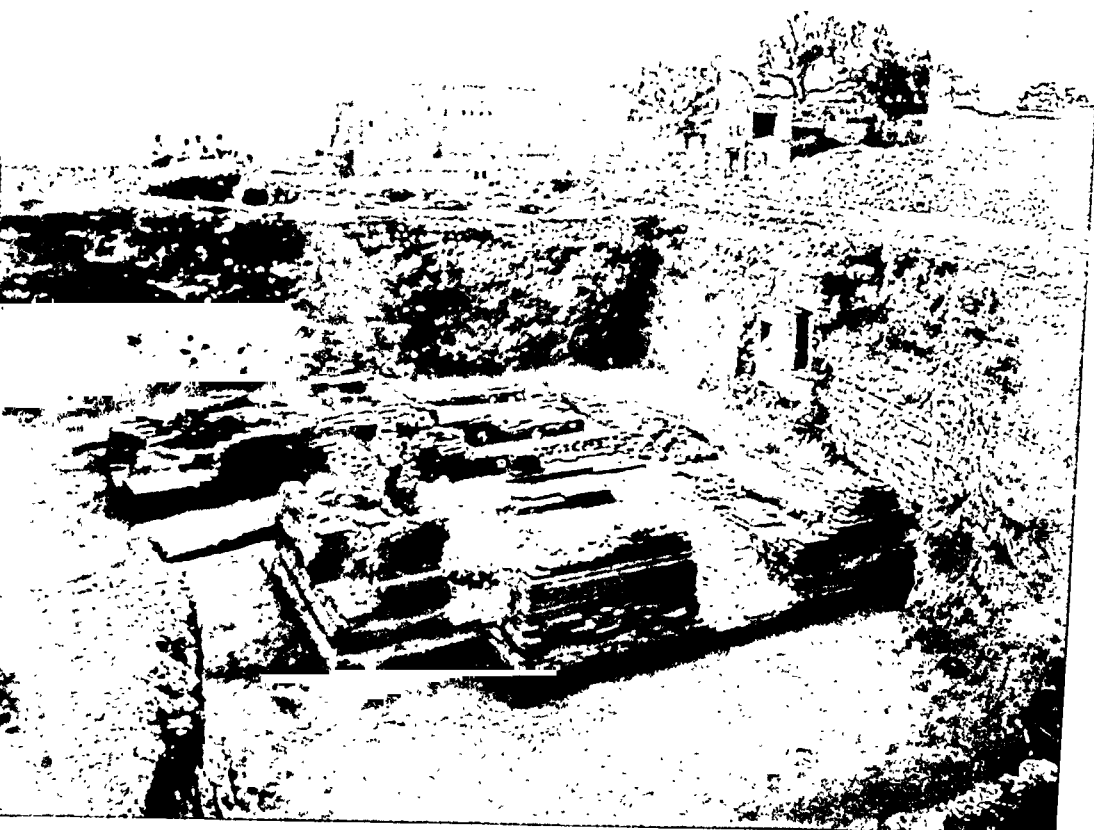
(b) EXCAVATION.



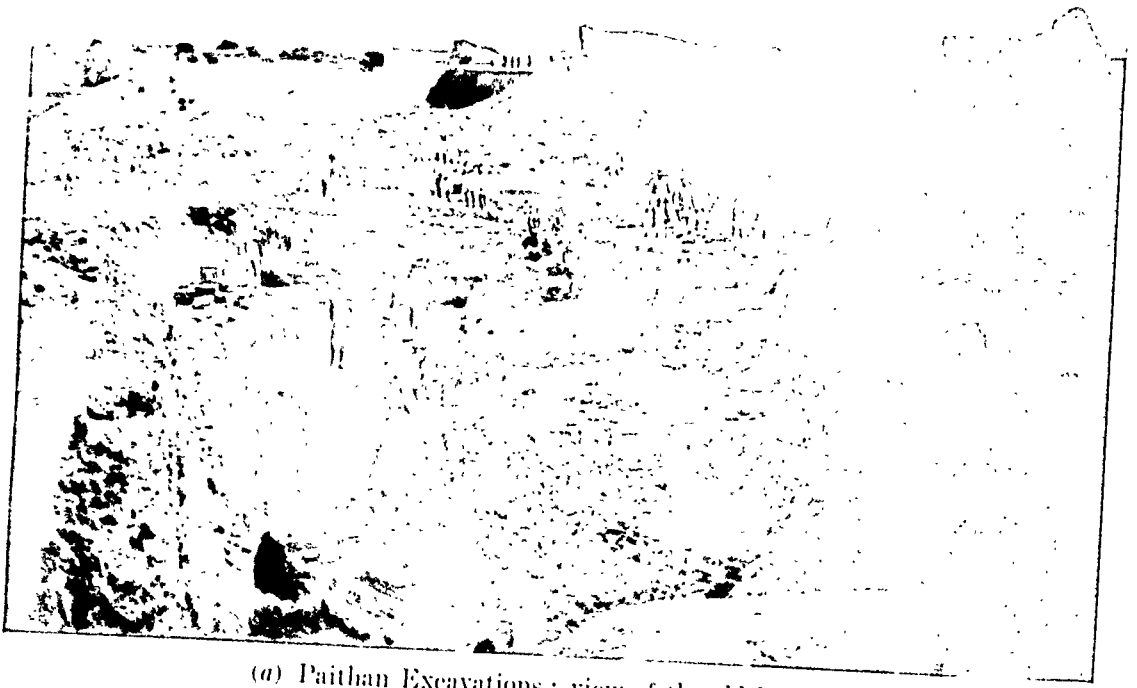
(b) The same : view of a trench, third stage



(a) Paithan Excavations : view of the two brick structures from West



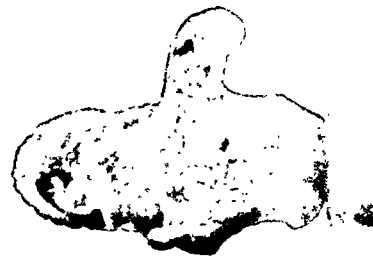
(b) The same : from South



(a) Paithan Excavations : view of the old brick drain



(b) The same : another view



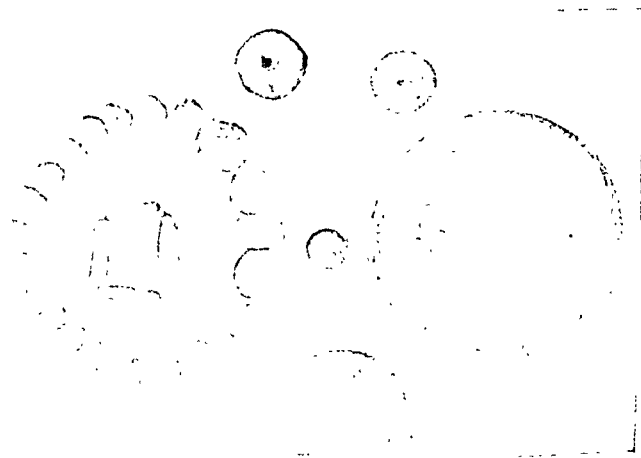
(a) Paithan Excavations:
terracotta figurine



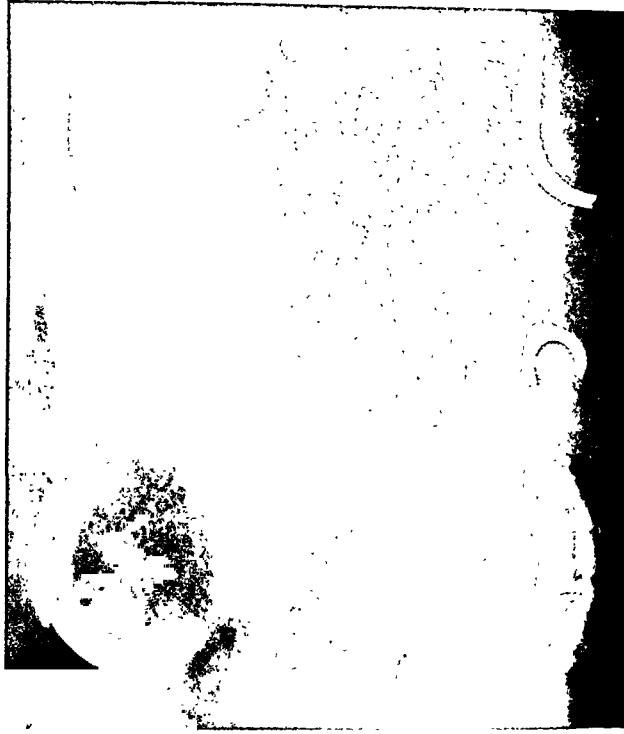
(b) The same: profile of the
same figure



(c) The same: terracotta mould
with two human figures



(d) The same: terracotta beads, crucible,
toy-cart wheels and other objects



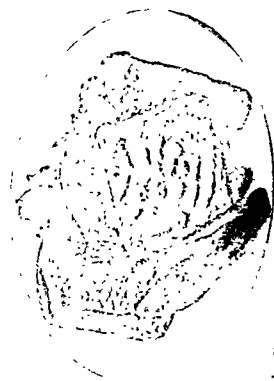
(e) The same: conch bangles, beads and other ornaments



(a) Paithan Excavations: beads of semi-precious stones



(c) The same: punch-marked coins



(d) The same: lump of ten Andhra copper coins with Bodhi-tree and railing emblem



(e) The same: another side of the same lump showing



(f) The same: an Andhra copper coin with the Swastika emblem